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BY LEWIS PADGETT

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JOHN W. CAMPBELL, JR.

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THIS IS NO DREAMED-UP HEADLINE—no "tone poem" conceived on an inspired typewriter. It's the way the army explains the command "Fix bayonets—charge!" Only the Infantry has it put to them in these words. As one doughboy said:

"I'll remember those eleven words the rest of my life."

Remember? How can he forget them? They describe the climax of the Infantryman's assault—they describe the most cold-blooded action on a battlefield. Yet Infantry officers and men have advanced countless times, to kill or be killed . . . at Saratoga . . . at New Orleans . . . the Argonne . . . New Guinea . . . Salerno. There's no rescinding this order—no retreating—no nothing but *plain killing.*

Right now, the Infantry is advancing—advancing to the order of "kill or be killed." Remember this the next time you see a doughboy on furlough. Remember this the next time you almost forget to write that letter. Remember it till your dying day. You can't pay the doughboy back—but at least you can be forever mindful of *his* role in this fight. His last command may be to "Fix bayonets—charge!"

"Keep your eye on the Infantry—THE DOUGHBOY DOES IT!"

AST—1V

Silicon for Carbon

ALL life, as we know it, is based on the immensely complex chemistry of carbon, hydrogen, oxygen and nitrogen compounds, plus minor additions of other elements—but carbon is the great *sine qua non.* The quadrivalent carbon atom, with its ability to link in chains, makes possible those complex molecules.

Only two other elements remotely approach carbon's ability to form long, linked chains—boron and silicon. Both have been proposed, rather haltingly, as possible substitutes for carbon in the life processes of an evolution of animals on extra-terrestial planets in various science-fiction stories. Rather hesitatingly because, while it was true that silicon-methane, silicon-ethane, and a few similar silicon-base simple organic-type compounds could be made, they didn't show any great signs of being interested in forming really complex organic compounds.

The science-fiction boys barely got under the wire on that one. (You'll remember they missed the electron microscope, and they've missed a good many gadgets the war has actually produced. In fact, we now have in mass production gadgets that even science-fictionists have declared were physically impossible!) American industry now has in quantity production silicon-based organic compounds of such complexity as to practically prove the possibility of silicon-life. Hydraulic brake fluid that turns to a wax, or thick grease at the -70° temperatures of the stratosphere, and becomes a thin fluid at the plus 130° of the desert is not very satisfactory. They have a *silicone* oil now—silicon-base equivalent of a light carbon-base lubricating oil—that doesn't change its viscosity appreciably over that entire temperature range. Unfortunately, it will not serve as a lubricant—yet. They have also developed silicone-rubber, and silicone-plastics. The oldest thermoplastic on the planet is —see the rotogravure section—glass. It was being turned out in real quantity production—by the cubic mile—by volcanoes before life appeared. The silicon-based glass can now be fitted into silicon-based rubber stoppers to carry a silicon-based fluid to, perhaps, a silicon-based "bakelite" tank.

The further development of silicones is almost impossible to predict. The silicon base compounds only roughly approximate the carbon-based types—a thoroughly desirable situation. The beauty of the silicone oil is that, entirely unlike carbon-base oils, it doesn't change viscosity. That similar divergence of properties is probable with other silicone equivalents is obvious; it's also apt to make them valuable just because of that divergence.

And, to date, we haven't heard from the borones—

THE EDITOR.

The Piper's Son

by LEWIS PADGETT

***It'd** be wonderful to belong to a race of telepaths, able to read the minds of your neighbors! It would—maybe. But it would be more apt to be a hell, with every nontelepath hating you.*

Illustrated by Orban

The Green Man was climbing the glass mountains, and hairy, gnomish faces peered at him from crevices. This was only another step in the Green Man's endless, exciting odyssey. He'd had a great many adventures already—in the Flame Country, among the Dimension Changers, with the City Apes who sneered endlessly while their blunt, clumsy fingers fumbled at deathrays. The trolls, however, were masters of magic, and were trying to stop the Green Man with spells. Little whirlwinds of force spun underfoot, trying to trip the Green Man, a figure of marvelous muscular development, handsome as a god, and hairless from head to foot, glistening pale green. The whirlwinds formed a

fascinating pattern. If you could thread a precarious path among them —avoiding the pale yellow ones especially—you could get through.

And the hairy gnomes watched malignantly, jealously, from their crannies in the glass crags.

Al Burkhalter, having recently achieved the mature status of eight full years, lounged under a tree and masticated a grass blade. He was so immersed in his daydreams that his father had to nudge his side gently to bring comprehension into the half-closed eyes. It was a good day for dreaming, anyway—a hot sun and a cool wind blowing down from the white Sierra peaks to the east. Timothy grass sent its faintly musty fragrance along the channels of air, and Ed Burkhalter was glad that his son was second-generation since the Blowup. He himself had been born ten years after the last bomb had been dropped, but secondhand memories can be pretty bad too.

"Hello, Al," he said, and the youth vouchsafed a half-lidded glance of tolerant acceptance.

"Hi, Dad."

"Want to come downtown with me?"

"Nope," Al said, relaxing instantly into his stupor.

Burkhalter raised a figurative eyebrow and half turned. On an impulse, then, he did something he rarely did without the tacit permission of the other party; he used his telepathic power to reach into Al's mind. There was, he admitted to himself, a certain hesitancy, a subconscious unwillingness on his part, to do this, even though Al had pretty well outgrown the nasty, inhuman formlessness of mental babyhood. There had been a time when Al's mind had been quite shocking in its alienage. Burkhalter remembered a few abortive experiments he had made before Al's birth; few fathers-to-be could resist the temptation to experiment with embryonic brains, and that had brought back nightmares Burkhalter had not had since his youth. There had been enormous rolling masses, and an appalling vastness, and other things. Prenatal memories were ticklish, and should be left to qualified mnemonic psychologists.

But now Al was maturing, and daydreaming, as usual, in bright colors. Burkhalter, reassured, felt that he had fulfilled his duty as a monitor and left his son still eating grass and ruminating.

Just the same, there was a sudden softness inside of him, and the aching, futile pity he was apt to feel for helpless things that were as yet unqualified for conflict with that extraordinarily complicated business of living. Conflict, competition, had not died out when war abolished itself; the business of adjustment even to one's surroundings was a conflict, and conversation a duel. With Al, too, there was a double problem. Yes, language was in effect a tariff wall, and a Baldy could appreciate that thoroughly, since the wall didn't exist between Baldies.

Walking down the rubbery walk that led to town center, Burkhalter grinned wryly and ran lean fingers

through his well-kept wig. Strangers were very often surprised to know that he was a Baldy, a telepath. They looked at him with wondering eyes, too courteous to ask how it felt to be a freak, but obviously avid. Burkhalter, who knew diplomacy, would be quite willing to lead the conversation.

"My folks lived near Chicago after the Blowup. That was why."

"Oh." Stare. "I'd heard that was why so many—" Startled pause.

"Freaks or mutations. There were both. I still don't know which class I belong to," he'd add disarmingly.

"You're no freak!" They'd didn't protest too much.

"Well, some mighty queer specimens came out of the radioactive-affected areas around the bomb-targets. Funny things happened to the germ plasm. Most of 'em died out; they couldn't reproduce; but you'll still find a few creatures in sanitariums—two heads, you know. And so on."

Nevertheless they were always ill-at-ease. "You mean you can read my mind—now?"

"I could, but I'm not. It's hard work, except with another telepath. And we Baldies—well, we don't, that's all." A man with abnormal muscle development wouldn't go around knocking people down. Not unless he wanted to be mobbed. Baldies were always sneakingly conscious of a hidden peril: lynch law. And wise Baldies didn't even imply that they had an . . . extra sense. They just said they were different, and let it go at that.

But one question was always implied, though not always mentioned. "If I were a telepath, I'd . . . how much do you make a year?"

They were surprised at the answer. A mindreader certainly could make a fortune, if he wanted. So why did Ed Burkhalter stay a semantics expert in Modoc Publishing Town, when a trip to one of the science towns would enable him to get hold of secrets that would get him a fortune?

There was a good reason. Self-preservation was a part of it. For which reason Burkhalter, and many like him, wore toupees. Though there were many Baldies who did not.

Modoc was a twin town with Pueblo, across the mountain barrier south of the waste that had been Denver. Pueblo held the presses, photolinotypes, and the machines that turned scripts into books, after Modoc had dealt with them. There was a helicopter distribution fleet at Pueblo, and for the last week Oldfield, the manager, had been demanding the manuscript of "Psychohistory," turned out by a New Yale man who had got tremendously involved in past emotional problems, to the detriment of literary clarity. The truth was that he distrusted Burkhalter. And Burkhalter, neither a priest nor a psychologist, had to become both without admitting it to the confused author of "Psychohistory."

The sprawling buildings of the publishing house lay ahead and be-

low, more like a resort than anything more utilitarian. That had been necessary. Authors were peculiar people, and often it was necessary to induce them to take hydrotherapic treatments before they were in shape to work out their books with the semantic experts. Nobody was going to bite them, but they didn't realize that, and either cowered in corners, terrified, or else blustered their way around, using language few could understand. Jem Quayle, author of "Psychohistory," fitted into neither group; he was simply baffled by the intensity of his own research. His personal history had qualified him too well for emotional involvements with the past—and that was a serious matter when a thesis of this particular type was in progress.

Dr. Moon, who was on the Board, sat near the south entrance, eating an apple which he peeled carefully with his silver-hilted dagger. Moon was fat, short, and shapeless; he didn't have much hair, but he wasn't a telepath; Baldies were entirely hairless. He gulped and waved at Burkhalter.

"Ed . . . *urp* . . . want to talk to you."

"Sure," Burkhalter said, agreeably coming to a standstill and rocking on his heels. Ingrained habit made him sit down beside the Boardman; Baldies, for obvious reasons, never stood up when nontelepaths were sitting. Their eyes met now on the same level. Burkhalter said, "What's up?"

"The store got some Shasta apples flown in yesterday. Better tell Ethel to get some before they're sold out. Here." Moon watched his companion eat a chunk, and nod.

"Good. I'll have her get some. The copter's laid up for today, though; Ethel pulled the wrong gadget."

"Foolproof," Moon said bitterly. "Huron's turning out some sweet models these days; I'm getting my new one from Michigan. Listen, Pueblo called me this morning on Quayle's book."

"Oldfield?"

"Our boy," Moon nodded. "He says can't you send over even a few chapters."

Burkhalter shook his head. 'I don't think so. There are some abstracts right in the beginning that just have to be clarified, and Quayle is—" He hesitated.

"What?"

Burkhalter thought about the Edoepus complex he'd uncovered in Quayle's mind, but that was sancrosanct, even though it kept Quayle from interpreting Darius with cold logic. "He's got muddy thinking in there. I can't pass it; I tried it on three readers yesterday, and got different reactions from all of them. So far 'Psychohistory' is all things to all men. The critics would lambaste us if we released the book as is. Can't you string Oldfield along for a while longer?"

"Maybe," Moon said doubtfully. "I've got a subjective novella I could rush over. It's light vicarious eroticism, and that's harmless; besides, it's semantically O. K.'d. We've been holding it up for an artist, but I can put Duman on it. I'll do that,

yeah. I'll shoot the script over to Pueblo and he can make the plates later. A merry life we lead, Ed."

"A little too merry sometimes," Burkhalter said. He got up, nodded, and went in search of Quayle, who was relaxing on one of the sun decks.

Quayle was a thin, tall man with a worried face and the abstract air of an unshelled tortoise. He lay on his flexiglass couch, direct sunlight toasting him from above, while the reflected rays sneaked up on him from below, through the transparent crystal. Burkhalter pulled off his shirt and dropped on a sunner beside Quayle. The author glanced at Burkhalter's hairless chest and half-formed revulsion rose in him: *A Baldy . . . no privacy . . . none of his business . . . fake eyebrows and lashes; he's still a—*

Something ugly, at that point.

Diplomatically Burkhalter touched a button, and on a screen overhead a page of "Psychohistory" appeared, enlarged and easily readable. Quayle scanned the sheet. It had code notations on it, made by the readers, recognized by Burkhalter as varied reactions to what should have been straight-line explanations. If three readers had got three different meanings out of that paragraph—well, what *did* Quayle mean? He reached delicately into the mind, conscious of useless guards erected against intrusion, mud barricades over which his mental eye stole like a searching, quiet wind. No ordinary man could guard his mind against a Baldy. But Baldies could guard their privacy against intrusion by other telepaths —adults, that is. There was a psychic selector band, a—

Here it came. But muddled a bit. *Darius*: that wasn't simply a word; it wasn't a picture, either; it was really a second *life*. But scattered, fragmentary. Scraps of scent and sound, and memories, and emotional reactions. Admiration and hatred. A burning impotence. A black tornado, smelling of pine, roaring across a map of Europe and Asia. Pine scent stronger now, and horrible humiliation, and remembered pain . . . eyes . . . *Get out!*

Burkhalter put down the dictograph mouthpiece and lay looking up through the darkened eye-shells he had donned. "I got out as soon as you wanted me to," he said. "I'm still out."

Quayle lay there, breathing hard. "Thanks,"he said. "Apologies. Why you don't ask a duello—"

"I don't want to duel with you," Burkhalter said. "Ive never put blood on my dagger in my life. Besides, I can see your side of it. Remember, this is my job, Mr. Quayle, and I've learned a lot of things—that I've forgotten again.' '

"It's intrusion, I suppose. I tell myself that it doesn't matter, but my privacy—is important."

Burkhalter said patiently, "We can keep trying it from different angles until we find one that isn't too private. Suppose, for example, I asked you if you admired Darius."

Admiration . . . and pine scent . . . and Burkhalter said quickly, "I'm out. O. K.?"

"Thanks," Quayle muttered. He turned on his side, away from the

other man. After a moment he said, "That's silly—turning over. I mean. You don't have to see my face to know what I'm thinking."

"You have to put out the welcome mat before I walk in," Burkhalter told him.

"I guess I believe that. I've met some Baldies, though, that were . . . that I didn't like."

"There's a lot on that order, sure. I know the type. The ones who don't wear wigs."

Quayle said, "They'll read your mind and embarrass you just for the fun of it. They ought to be—taught better."

Burkhalter blinked in the sunlight. "Well, Mr. Quayle, it's this way. A Baldy's got his problems, too. He's got to orient himself to a world that isn't telepathic; and I suppose a lot of Baldies rather feel that they're letting their specialization go to waste. There *are* jobs a man like me is suited for—"

"*Man!*" He caught the scrap of thought from Quayle. He ignored it, his face as always a mobile mask, and went on.

"Semantics have always been a problem, even in countries speaking only one tongue. A qualified Baldy is a swell interpreter. And, though there aren't any Baldies on the detective forces, they often work with the police. It's rather like being a machine that can do only a few things."

"A few things more than humans can," Quayle said.

Sure, Burkhalter thought, if we could compete on equal footing with nontelepathic humanity. But would blind men trust one who could see? Would they play poker with him? A sudden, deep bitterness put an unpleasant taste in Burkhalter's mouth. What was the answer? Reservations for Baldies? Isolation? And would a nation of blind men trust those with vision enough for that? Or would they be dusted off—the sure cure, the check-and-balance system that made war an impossibility.

He remembered when Red Bank had been dusted off, and maybe that had been justified. The town was getting too big for its boots, and personal dignity was a vital factor; you weren't willing to lose face as long as a dagger swung at your belt. Similarly, the thousands upon thousands of little towns that covered America, each with its peculiar specialty—helicopter manufacture for Huron and Michigan, vegetable farming for Conoy and Diego, textiles and education and art and machines—each little town had a wary eye on all the others. The science and research centers were a little larger; nobody objected to that, for technicians never made war except under pressure; but few of the towns held more than a few hundred families. It was check-and-balance in most efficient degree; whenever a town showed signs of wanting to become a city—thence, a capital, thence, an imperialistic empire—it was dusted off. Though that had not happened for a long while. And Red Bank might have been a mistake.

Geopolitically it was a fine set-

up; sociologically it was acceptable, but brought necessary changes. There was subconscious swashbuckling. The rights of the individual had become more highly regarded as decentralization took place. And men learned.

They learned a monetary system based primarily upon barter. They learned to fly; nobody drove surface cars. They learned new things, but they did not forget the Blowup, and in secret places near every town were hidden the bombs that could utterly and fantastically exterminate a town, as such bombs had exterminated the cities during the Blowup.

And everybody knew how to make those bombs. They were beautifully, terribly simple. You could find the ingredients anywhere and prepare them easily. Then you could take your helicopter over a town, drop an egg overside—and perform an erasure.

Outside of the wilderness malcontents, the maladjusted people found in every race, nobody kicked. And the roaming tribes never raided and never banded together in large groups—for fear of an erasure.

The artisans were maladjusted too, to some degree, but they weren't antisocial, so they lived where they wanted and painted, wrote, composed, and retreated into their own private worlds. The scientists, equally maladjusted in other lines, retreated to their slightly larger towns, banding together in small universes, and turned out remarkable technical achievements.

And the Baldies—found jobs where they could.

No nontelepath would have viewed the world environment quite as Burkhalter did. He was abnormally conscious of the human element, attaching a deeper, more profound significance to those human values, undoubtedly because he saw men in more than the ordinary dimensions. And also, in a way—and inevitably—he looked at humanity from outside.

Yet he was human. The barrier that telepathy had raised made men suspicious of him, more so than if he had had two heads—then they could have pitied. As it was—

As it was, he adjusted the scanner until new pages of the typescript came flickering into view above. "Say when," he told Quayle.

Quayle brushed back his gray hair. "I feel sensitive all over," he objected. "After all, I've been under a considerable strain correlating my material."

"Well, we can always postpone publication." Burkhalter threw out the suggestion casually, and was pleased when Quayle didn't nibble. He didn't like to fail, either.

"No. No, I want to get the thing done now."

"Mental catharsis—"

"Well, by a psychologist, perhaps. But now by—"

"—a Baldy. You know that a lot of psychologists have Baldy helpers. They get good results, too."

Quayle turned on the tobacco smoke, inhaling slowly. "I suppose . . . I've not had much contact with Baldies. Or too much—without selectivity. I saw some in an asylum

once. I'm not being offensive, am I?"

"No," Burkhalter said. "Every mutation can run too close to the line. There were lots of failures. The hard radiations brought about one true mutation: hairless telepaths, but they didn't all hew true to the line. The mind's a queer gadget—you know that. It's a colloid balancing, figuratively, on the point of a pin. If there's any flaw, telepathy's apt to bring it out. So you'll find that the Blowup caused a hell of a lot of insanity. Not only among the Baldies, but among the other mutations that developed then. Except that the Baldies are almost always paranoidal."

"And dementia praecox," Quayle said, finding relief from his own embarrassment in turning the spotlight on Burkhalter.

"And d. p. Yeah. When a confused mind acquires the telepathic instinct—a hereditary bollixed mind—it can't handle it all. There's disorientation. The paranoia group retreat into their own private worlds, and the d. p.'s simply don't realize that *this* world exists. There are distinctions, but I think that's a valid basis."

"In a way," Quayle said, "it's frightening. I can't think of any historcial parallel."

"No."

"What do you think the end of it will be?"

"I don't know," Burkhalter said thoughtfully. "I think we'll be assimilated. There hasn't been enough time yet. We're specialized in a certain way, and we're useful in certain jobs."

"If you're satisfied to stay there. The Baldies who won't wear wigs—"

"They're so bad-tempered I expect they'll all be killed off in duels eventually," Burkhalter smiled. "No great loss. The rest of us, we're getting what we want—acceptance. We don't have horns or halos."

Quayle shook his head. "I'm glad, I think, that I'm not a telepath. The mind's mysterious enough anyway, without new doors opening. Thanks for letting me talk. I think I've got part of it talked out, anyway. Shall we try the script again?"

"Sure," Burkhalter said, and again the procession of pages flickered on the screen above them. Quayle did seem less guarded; his thoughts were more lucid, and Burkhalter was able to get at the true meanings of many of the hitherto muddy statements. They worked easily, the telepath dictating rephrasings into his dictograph, and only twice did they have to hurdle emotional tangles. At noon they knocked off, and Burkhalter, with a friendly nod, took the dropper to his office, where he found some calls listed on the visor. He ran off repeats, and a worried look crept into his blue eyes.

He talked with Dr. Moon in a booth at luncheon. The conversation lasted so long that only the induction cups kept the coffee hot, but Burkhalter had more than one problem to discuss. And he'd known

Moon for a long time. The fat man was one of the few who were not, he thought, subconsciously repelled by the fact that Burkhalter was a Baldy.

"I've never fought a duel in my life, Doc. I can't afford to."

"You can't afford not to. You can't turn down the challenge, Ed. It isn't done."

"But this fellow Reilly—I don't even know him."

"I know of him," Moon said. "He's got a bad temper. Dueled a lot."

Burkhalter slammed his hand down on the table. "It's ridiculous. I won't do it!"

"Well," Moon said practically, "Your wife can't fight him. And if Ethel's been reading Mrs. Reilly's mind and gossiping, Reilly's got a case."

"Don't you think we know the dangers of that?" Burkhalter asked in a low voice. "Ethel doesn't go around reading minds any more than I do. It'd be fatal—for us. And for any other Baldy."

"Not the hairless ones. The ones who won't wear wigs. They—"

"They're fools. And they're giving all the Baldies a bad name. Point one, Ethel doesn't read minds; she didn't read Mrs. Reilly's. Point two, she doesn't gossip."

"La Reilly is obviously an hysterical type," Moon said. "Word got around about this scandal, whatever it was, and Mrs. Reilly remembered she'd seen Ethel lately. She's the type who needs a scapegoat anyway. I rather imagine she let word drop herself, and had to cover up so her husband wouldn't blame her."

"I'm not going to accept Reilly's challenge," Burkhalter said doggedly.

"You'll have to."

"Listen, Doc, maybe—"

"What?"

"Nothing. An idea. It might work. Forget about that; I think I've got the right answer. It's the only one, anyway. I can't afford a duel and that's flat."

"You're not a coward."

"There's one thing Baldies are afraid of," Burkhalter said, "and that's public opinion. I happen to know I'd kill Reilly. That's the reason why I've never dueled in my life."

Moon drank coffee. "Hm-m-m. I think—"

"Don't. There was something else. I'm wondering if I ought to send Al off to a special school."

"What's wrong with the kid?"

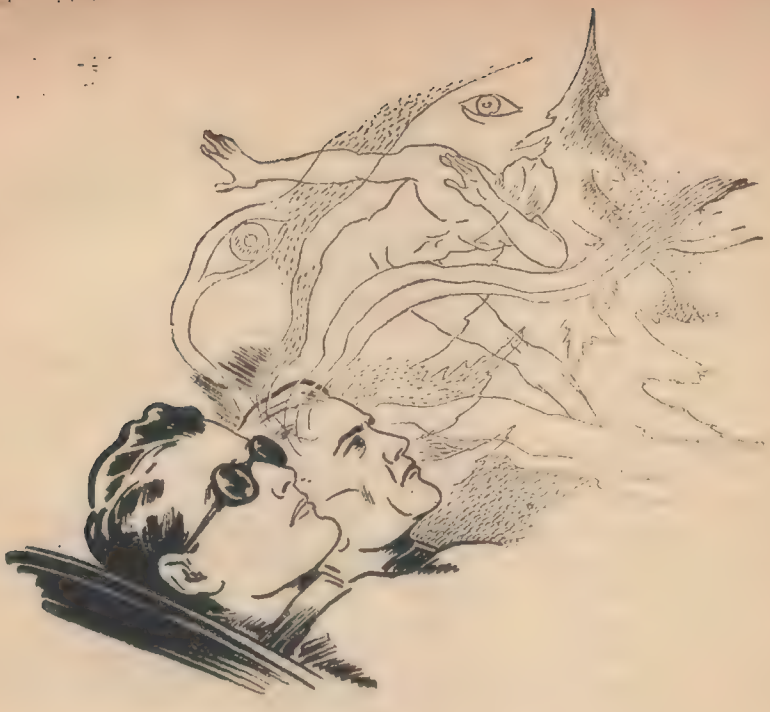
"He's turning out to be a beautiful delinquent. His teacher called me this morning. The playback was something to hear. He's talking funny and acting funny. Playing nasty little tricks on his friends—if he has any left by now."

"All kids are cruel."

"Kids don't know what cruelty means. That's why they're cruel; they lack empathy. But Al's getting—" Burkhalter gestured helplessly. "He's turning into a young tyrant. He doesn't seem to give a care about anything, according to his teacher."

"That's not too abnormal, so far."

"That's not the worst. He's become very egotistical. Too much so.



I don't want him to turn into one of the wigless Baldies you were mentioning." Burkhalter didn't mention the other possibility: paranoia, insanity.

"He must pick things up somewhere. At home? Scarcely, Ed. Where else does he go?"

"The usual places. He's got a normal environment."

"I should think," Moon said, "that a Baldy would have unusual opportunities in training a youngster. The mental rapport—eh?"

"Yeah. But—I don't know. The trouble is," Burkhalter said almost inaudibly, "I wish to God I wasn't different. We didn't ask to be telepaths. Maybe it's all very wonderful in the long run, but I'm one person, and I've got my own microcosm. People who deal in long-term sociology are apt to forget that. They can figure out the answers, but it's every individual man—or Baldy—who's got to fight his own personal battle while he's alive. And it isn't as clear-cut as a battle. It's worse; it's the necessity of watching yourself every second, of fitting yourself into a world that doesn't want you."

Moon looked uncomfortable. "Are you being a little sorry for yourself, Ed?"

Burkhalter shook himself. "I am, Doc. But I'll work it out."

"We both will," Moon said, but Burkhalter didn't really expect much help from him. Moon would be willing, but it was horribly different for an ordinary man to conceive that a Baldy was—the same. It was the difference that men looked for, and found.

Anyway, he'd have to settle matters before he saw Ethel again. He could easily conceal the knowledge, but she would recognize a mental barrier and wonder. Their marriage had been the more ideal because of the additional rapport, something that compensated for an inevitable, half-sensed estrangement from the rest of the world.

"How's 'Psychohistory' going?" Moon asked after a while.

"Better than I expected. I've got a new angle on Quayle. If I talk about myself, that seems to draw him out. It gives him enough confidence to let him open his mind to me. We may have those first chapters ready for Oldfield, in spite of everything."

"Good. Just the same, he can't rush us. If we've got to shoot out books that fast, we might as well go back to the days of semantic confusion. Which we won't!"

"Well," Burkhalter said, getting up, "I'll smoosh along. See you."

"About Reilly—"

"Let it lay." Burkhalter went out, heading for the address his visor had listed. He touched the dagger at his belt. Dueling wouldn't do for Baldies, but—

A greeting thought crept into his mind, and, under the arch that led into the campus, he paused to grin at Sam Shane, a New Orleans area Baldy who affected a wig of flaming red. They didn't bother to talk.

Personal question, involving mental, moral and physical well-being.

A satisfied glow. And you, Burkhalter? For an instant Burkhalter half-saw what the symbol of his name meant to Shane.

Shadow of trouble.

A warm, willing anxiousness to help. There was a bond between Baldies.

Burkhalter thought: But everywhere I'd go there'd be the same suspicion. We're freaks.

More so elsewhere, Shane thought. There are a lot of us in Modoc Town. People are invariably more suspicious where they're not in daily contact with—Us.

The boy—

I've trouble too, Shane thought. It's worried me. My two girls—

Delinquency?

Yes.

Common denominators?

Don't know. More than one of Us have had the same trouble with our kids.

Secondary characteristic of the mutation? Second generation emergence?

Doubtful, Shane thought, scowling in his mind, shading his concept with a wavering question. We'll think it over later. Must go.

Burkhalter sighed and went on his way. The houses were strung out around the central industry of Modoc, and he cut through a park toward his destination. It was a sprawling curved building, but it

wasn't inhabited, so Burkhalter filed Reilly for future reference, and, with a glance at his timer, angled over a hillside toward the school. As he expected, it was recreation time, and he spotted Al lounging under a tree, some distance from his companions, who were involved in a pleasantly murderous game of Blowup.

He sent his thought ahead.

The Green Man had almost reached the top of the mountain. The hairy gnomes were pelting on his trail, most unfairly shooting sizzling light-streaks at their quarry, but the Green Man was agile enough to dodge. The rocks were leaning—

"Al."

—inward, pushed by the gnomes, ready to—

"Al!" Burkhalter sent his thought with the word, jolting into the boy's mind, a trick he very seldom employed, since youth was practically defenseless against such invasion.

"Hello, Dad," Al said, undisturbed. "What's up?"

"A report from your teacher."

"I didn't do anything."

"She told me what is was. Listen, kid. Don't start getting any funny ideas in your head."

"I'm not."

"Do you think a Baldy is better or worse than a non-Baldy?"

Al moved his feet uncomfortably. He didn't answer.

"Well," Burkhalter said, "the answer is both and neither. And here's why. A Baldy can communicate mentally, but he lives in a world where most people can't."

"They're dumb," Al opined.

"Not so dumb, if they're better suited to their world than you are. You might as well say a frog's better than a fish because he's an amphibian." Burkhalter briefly amplified and explained the terms telepathically.

"Well . . . oh, I get it, all right."

"Maybe," Burkhalter said slowly, "what you need is a swift kick in the pants. That thought wasn't so hot. What was it again?"

Al tried to hide it, blanking out. Burkhalter began to lift the barrier, an easy matter for him, but stopped. Al regarded his father in a most unfilial way—in fact, as a sort of boneless fish. That had been clear.

"If you're so egotistical," Burkhalter pointed out, "maybe you can see it this way. Do you know why there aren't any Baldies in key positions?"

"Sure I do," Al said unexpectedly. "They're afraid."

"Of what, then?"

"The—" That picture had been very curious, a commingling of something vaguely familiar to Burkhalter. "The non-Baldies."

"Well, if we took positions where we could take advantage of our telepathic function, non-Baldies would be plenty envious—especially if we were successes. If a Baldy even invented a better mousetrap, plenty of people would say he'd stolen the idea from some non-Baldy's mind. You get the point?"

"Yes, Dad." But he hadn't. Burkhalter sighed and looked up. He recognized one of Shane's girls on a nearby hillside, sitting alone

against a boulder. There were other isolated figures here and there. Far to the east the snowy rampart of the Rockies made an irregular pattern against blue sky.

"Al," Burkhalter said, "I don't want you to get a chip on your shoulder. This is a pretty swell world, and the people in it are, on the whole, nice people. There's a law of averages. It isn't sensible for us to get too much wealth or power, because that'd militate against us—and we don't need it anyway. Nobody's poor. We find our work, we do it, and we're reasonably happy. We have some advantages non-Baldies don't have; in marriage, for example. Mental intimacy is quite as important as physical. But I don't want you to feel that being a Baldy makes you a god. It doesn't. I can still," he added thoughtfully, "spank it out of you, in case you care to follow out that concept in your mind at the moment."

Al gulped and beat a hasty retreat. "I'm sorry. I won't do it again."

"And keep your hair on, too. Don't take your wig off in class. Use the stickum stuff in the bathroom closet."

"Yes, but . . . Mr. Venner doesn't wear a wig."

"Remind me to do some historical research with you on zoot-suiters," Burkhalter said. "Mr. Venner's wiglessness is probably his only virtue, if you consider it one."

"He makes money."

"Anybody would, in that general store of his. But people don't buy from him if they can help it, you'll notice. That's what I mean by a chip on your shoulder. He's got one. There are Baldies like Venner, Al, but you might, sometime, ask the guy if he's happy. For your information, I am. More than Venner, anyway. Catch?"

"Yes, Dad." Al seemed submissive, but it was merely that. Burkhalter, still troubled, nodded and walked away. As he passed near the Shane girl's boulder he caught a scrap: *—at the summit of the Glass Mountains, rolling rocks back at the gnomes until—*

He withdrew; it was an unconscious habit, touching minds that were sensitive, but with children it was definitely unfair. With adult Baldies it was simply the instinctive gesture of tipping your hat; one answered or one didn't. The barrier could be erected; there could be a blank-out; or there could be the direct snub of concentration on a single thought, private and not to be intruded on.

A copter with a string of gliders was coming in from the south: a freighter laden with frozen foods from South America, to judge by the markings. Burkhalter made a note to pick up an Argentine steak. He'd got a new recipe he wanted to try out, a charcoal broil with barbecue sauce, a welcome change from the short-wave cooked meats they'd been having for a week. Tomatoes. chile, mm-m—what else? Oh, yes. The duel with Reilly. Burkhalter absently touched his dagger's hilt and made a small, mocking sound in his throat. Perhaps he was in-

nately a pacifist. It was rather difficult to think of a duel seriously, even though everyone else did, when the details of a barbecue dinner were prosaic in his mind.

So it went. The tides of civilization rolled in century-long waves across the continents, and each particular wave, though conscious of its participation in the tide, nevertheless was more preoccupied with dinner. And, unless you happened to be a thousand feet tall, had the brain of a god and a god's life-span, what was the difference? People missed a lot—people like Venner, who was certainly a crank, not batty enough to qualify for the asylum, but certainly a potential paranoid type. The man's refusal to wear a wig labeled him as an individualist, but as an exhibitionist, too. If he didn't feel ashamed of his hairlessness, why should he bother to flaunt it? Besides, the man had a bad temper, and if people kicked him around, he asked for it by starting the kicking himself.

But as for Al, the kid was heading for something approaching delinquency. It couldn't be the normal development of childhood, Burkhalter thought. He didn't pretend to be an expert, but he was still young enough to remember his own formative years, and he had had more handicaps than Al had now: in those days, Baldies had been very new and very freakish. There'd been more than one movement to isolate, sterilize, or even exterminate the mutations.

Burkhalter sighed. If he had been born before the Blowup, it might have been different. Impossible to say. One could read history, but one couldn't live it. In the future, perhaps, there might be telepathic libraries in which that would be possible. So many opportunities, in fact—and so few that the world was ready to accept as yet. Eventually Baldies would not be regarded as freaks, and by that time real progress would be possible.

But people don't make history—Burkhalter thought. Peoples do that. Not the individual.

He stopped by Reilly's house again, and this time the man answered, a burly, freckled, squint-eyed fellow with immense hands and, Burkhalter noted, fine muscular co-ordination. He rested those hands on the Dutch door and nodded.

"Who're you, mister?"

"My name's Burkhalter."

Comprehension and wariness leaped into Reilly's eyes. "Oh. I see. You got my call?"

"I did," Burkhalter said. "I want to talk to you about it. May I come in?"

"O. K." He stepped back, opening the way through a hall and into a spacious living room, where diffused light filtered through glassy mosaic walls. "Want to set the time?"

"I want to tell you you're wrong."

"Now wait a minute," Reilly said, patting the air. "My wife's out now, but she gave me the straight of it. I don't like this business of sneaking into a man's mind; it's crooked. You should have told *your* wife to mind her business—or keep

her tongue quiet."

Burkhalter said patiently, "I give you my word, Reilly, that Ethel didn't read your wife's mind."

"Does she say so?"

"I . . . well, I haven't asked her."

"Yeah," Reilly said with an air of triumph.

"I don't need to. I know her well enough. And . . . well, I'm a Baldy myself."

"I know you are," Reilly said. "For all I know, you may be reading my mind now." He hesitated. "Get out of my house. I like my privacy. We'll meet at dawn tomorrow, if that's satisfactory with you. Now get out." He seemed to have something on his mind, some ancient memory, perhaps, that he didn't wish exposed.

Burkhalter nobly resisted the temptation. "No Baldy would read —"

"Go on, get out!"

"Listen! You wouldn't have a chance in a duel with me!"

"Do you know how many notches I've got?" Reilly asked.

"Ever dueled a Baldy?"

"I'll cut the notch deeper tomorrow. Get out, d'you hear?"

Burkhalter, biting his lips, said, "Man, don't you realize that in a duel I could read your mind?"

"I don't care . . . what?"

"I'd be half a jump ahead of you. No matter how instinctive your actions would be, you'd know them a split second ahead of time in your mind. And I'd know all your tricks and weaknesses, too. Your technique would be an open book to me. Whatever you thought of—"

"No." Reilly shook his head. "Oh, no. You're smart, but it's a phony set-up."

Burkhalter hesitated, decided, and swung about, pushing a chair out of the way. "Take out your dagger," he said. "Leave the sheath snapped on; I'll show you what I mean."

Reilly's eyes widened. "If you want it now—"

"I don't." Burkhalter shoved another chair away. He unclipped his dagger, sheath and all, from his belt, and made sure the little safety clip was in place. "We've room enough here. Come on."

Scowling, Reilly took out his own dagger, held it awkwardly, baffled by the sheath, and then suddenly feinted forward. But Burkhalter wasn't there; he had anticipated, and his own leather sheath slid up Reilly's belly.

"That," Burkhalter said, "would have ended the fight."

For answer Reilly smashed a hard dagger-blow down, curving at the last moment into a throat-cutting slash. Burkhalter's free hand was already at his throat; his other hand, with the sheathed dagger, tapped Reilly twice over the heart. The freckles stood out boldly against the pallor of the larger man's face. But he was not yet ready to concede. He tried a few more passes, clever, well-trained cuts, and they failed, because Burkhalter had anticipated them. His left hand invariably covered the spot where Reilly had aimed, and which he never struck.

Slowly Reilly let his arm fall. He moistened his lips and swallowed. Burkhalter busied himself reclipping his dagger in place.

"Burkhalter," Reilly said, "you're a devil."

"Far from it. I'm just afraid to take a chance. Do you really think being a Baldy is a snap?"

"But, if you can read minds—"

'How long do you think I'd last if I did any dueling? It would be too much of a set-up. Nobody would stand for it, and I'd end up dead. I can't duel, because it'd be murder, and people would know it was murder. I've taken a lot of cracks, swallowed a lot of insults, for just that reason. Now, if you like, I'll swallow another and apologize. I'll admit anything you say. But I can't duel with you, Reilly."

"No, I can see that. And—I'm glad you came over." Reilly was still white. "I'd have walked right into a set-up."

"Not my set-up," Burkhalter said. "I wouldn't have dueled. Baldies aren't so lucky, you know. They've got handicaps—like this. That's why they can't afford to take chances and antagonize people, and why we never read minds, unless we're asked to do so."

"It makes sense. More or less." Reilly hesitated. "Look, I withdraw that challenge. O. K.?"

"Thanks," Burkhalter said, putting out his hand. It was taken rather reluctantly. We'll leave it at that, eh?"

"Right." But Reilly was still anxious to get his guest out of the house.

Burkhalter walked back to the Publishing Center and whistled tunelessly. He could tell Ethel now; in fact, he had to, for secrets between them would have broken up the completeness of their telepathic intimacy. It was not that their minds lay bare to each other, it was, rather, that any barrier could be sensed by the other, and the perfect *rapport* wouldn't have been so perfect. Curiously, despite this utter intimacy, husband and wife managed to respect one another's privacy.

Ethel might be somewhat distressed, but the trouble had blown over, and, besides, she was a Baldy too. Not that she looked it, with her wig of fluffy chestnut hair and those long, curving lashes. But her parents had lived east of Seattle during the Blowup, and afterward, too, before the hard radiation's effects had been thoroughly studied.

The snow-wind blew down over Modoc and fled southward along the Utah Valley. Burkhalter wished he was in his copter, alone in the blue emptiness of the sky. There was a quiet, strange peace up there that no Baldy ever quite achieved on the earth's surface, except in the depths of a wilderness. Stray fragments of thoughts were always flying about, subsensory, but like the almost-unheard whisper of a needle on a phonograph record, never ceasing. That, certainly, was why almost all Baldies loved to fly and were expert pilots. The high waste deserts of the air were their blue hermitages.

Still, he was in Modoc now, and

overdue for his interview with Quayle. Burkhalter hastened his steps. In the main hall he met Moon, said briefly and cryptically that he'd taken care of the duel, and passed on, leaving the fat man to stare a question after him. The only visor call was from Ethel; the playback said she was worried about Al, and would Burkhalter check with the school. Well, he had already done so—unless the boy had managed to get into more trouble since then. Burkhalter put in a call and reassured himself. Al was as yet unhanged.

He found Quayle in the same private solarium, and thirsty. Burkhalter ordered a couple of dramzowies sent up, since he had no objection to loosening Quayle's inhibitions. The gray-haired author was immersed in a sectional historical globe-map, illuminating each epochal layer in turn as he searched back through time.

"Watch this," he said, running his hand along the row of buttons. "See how the German border fluctuates?" It fluctuated, finally vanishing entirely as semimodern times were reached. "And Portugal. Notice its zone of influence? Now—" The zone shrank steadily from 1600 on, while other countries shot out radiating lines and assumed sea power.

Burkhalter sipped his dramzowie. "Not much of that now."

"No, since . . . what's the matter?"

"How do you mean?"

"You look shot."

"I didn't know I showed it," Burkhalter said wryly. "I just finagled my way out of a duel."

"That's one custom I never saw much sense to," Quayle said. "What happened? Since when can you finagle out?"

Burkhalter explained, and the writer took a drink and snorted. "What a spot for you. Being a Baldy isn't such an advantage after all, I guess."

"It has distinct disadvantages at times." On impulse Burkhalter mentioned his son. "You see my point, eh? I don't *know*, really, what standards to apply to a young Baldy. He is a mutation, after all. And the telepathic mutation hasn't had time to work out yet. We can't rig up controls, because guinea pigs and rabbits won't breed telepaths. That's been tried, you know. And—well, the child of a Baldy needs very special training so he can cope with his ultimate maturity."

"You seem to have adjusted well enough."

"I've—learned. As most sensible Baldies have. That's why I'm not a wealthy man, or in politics. We're really buying safety for our species by foregoing certain individual advantages. Hostages to destiny—and destiny spares us. But we get paid too, in a way. In the coinage of future benefits—negative benefits, really, for we ask only to be spared and accepted—and so we have to deny ourselves a lot of present, positive benefits. An appeasement to fate."

"Paying the piper," Quayle nodded.

"We are the pipers. The Baldies

as a group, I mean. And our children. So it balances; we're really paying ourselves. If I wanted to take unfair advantage of my telepathic power—my son wouldn't live very long. The Baldies would be wiped out. Al's got to learn that, and he's getting pretty antisocial."

"All children are antisocial," Quayle pointed out. "They're utter individualists. I should think the only reason for worrying would be if the boy's deviation from the norm were connected with his telepathic sense."

"There's something in that." Burkhalter reached out left-handedly and probed delicately at Quayle's mind, noting that the antagonism was considerably lessened. He grinned to himself and went on talking about his own troubles. "Just the same, the boy's father to the man. And an adult Baldy has got to be pretty well adjusted, or he's sunk."

"Environment is as important as heredity. One complements the other. If a child's reared correctly, he won't have much trouble—unless heredity is involved."

"As it may be. There's so little known about the telepathic mutation. If baldness is one secondary characteristic, maybe—something else—emerges in the third or fourth generations. I'm wondering if telepathy is really good for the mind."

Quayle said, "Humph. Speaking personally, it makes me nervous—"

"Like Reilly."

"Yes," Quayle said, but he didn't care much for the comparison. "Well—anyhow, if a mutation's a failure, it'll die out. It won't breed true."

"What about hemophilia?"

"How many people have hemophilia?" Quayle asked. "I'm trying to look at it from the angle of psychohistorian. If there'd been telepaths in the past, things might have been different."

"How do you know there weren't?" Burkhalter asked.

Quayle blinked. "Oh. Well. That's true, too. In medieval times they'd have been called wizards—or saints. The Duke-Rhine experiments—but such accidents would have been abortive. Nature fools around trying to hit the . . . ah . . . the jackpot, and she doesn't always do it on the first try."

"She may not have done it now." That was habit speaking, the ingrained caution of modesty. "Telepathy may be merely a semisuccessful try at something pretty unimaginable. A sort of four-dimensional sensory concept, maybe."

"That's too abstract for me." Quayle was interested, and his own hesitancies had almost vanished; by accepting Burkhalter as a telepath, he had tacitly wiped away his objections to telepathy *per se*. "The old-time Germans always had an idea they were different; so did the . . . ah . . . what was that Oriental race? They had the islands off the China coast."

"The Japanese," said Burkhalter, who had a good memory for trifles.

"Yes. They knew, very definitely, that they were a superior race because they were directly

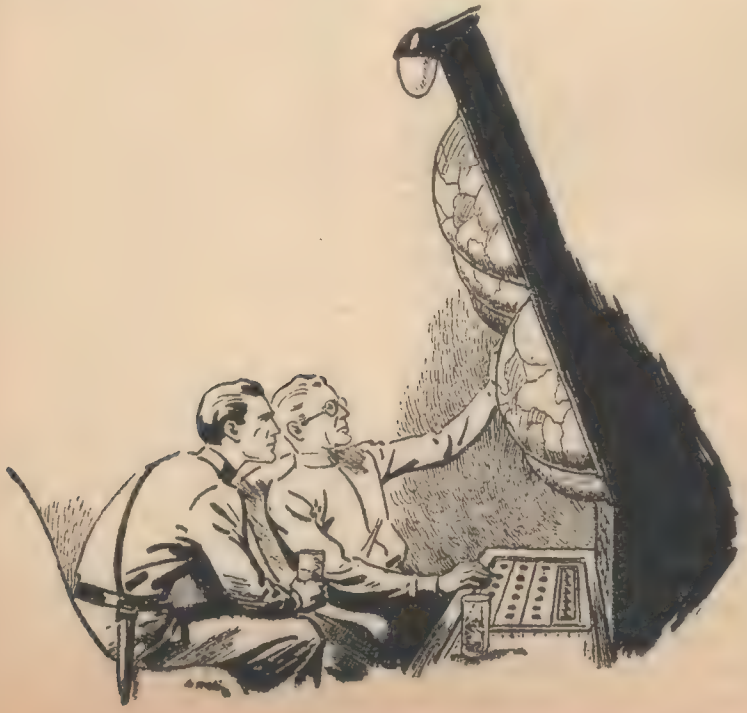
descended from gods. They were short in stature; heredity made them self-conscious when dealing with larger races. But the Chinese aren't tall, the Southern Chinese, and they weren't handicapped in that way."

"Environment, then?"

"Environment, which caused propaganda. The . . . ah . . . the Japanese took Buddhism, and altered it completely into Shinto, to suit their own needs. The samurai, warrior-knights, were the ideals, the code of honor was fascinatingly cockeyed. The principle of Shinto was to worship your superiors and subjugate your inferiors. Ever seen the Japanese jewel-trees?"

"I don't remember them. What are they?"

"Miniature replicas of espaliered trees, made of jewels, with trinkets hanging on the branches. Including a mirror—always. The first jewel-tree was made to lure the Moon-goddess out of a cave where she was sulking. It seems the lady was so intrigued by the trinkets and by her face reflected in the mirror that she came out of her hideout. All the Japanese morals were dressed up in pretty clothes; that was the bait. The old-time Germans did much the same thing. The last German dictator, Poor Hitler they called him—I forget why, but there was some reason—he revived the old



Siegfried legend. It was racial paranoia. The Germans worshiped the house-tyrant, not the mother, and they had extremely strong family ties. That extended to the state. They symbolized Poor Hitler as their All-Father, and so eventually we got the Blowup. And, finally, mutations."

"After the deluge, me," Burkhalter murmured, finishing his dramzowie. Quayle was staring at nothing.

"Funny," he said after a while. "This All-Father business—"

"Yes?"

"I wonder if you know how powerfully it can affect a man?"

Burkhalter didn't say anything. Quayle gave him a sharp glance.

"Yes," the writer said quietly. "You're a man, after all. I owe you an apology, you know."

Burkhalter smiled. "You can forget that."

"I'd rather not," Quayle said. "I've just realized, pretty suddenly, that the telepathic sense isn't so important. I mean—it doesn't make you *different*. I've been talking to you—"

"Sometimes it takes people years before they realize what you're finding out," Burkhalter remarked. "Years of living and working with something they think of as a Baldy."

"Do you know what I've been concealing in my mind?" Quayle asked.

"No. I don't."

"You lie like a gentleman. Thanks. Well, here it is, and I'm telling you by choice, because I want to. I don't care if you got the information out of my mind already; I just want to tell you of my own free will. My father . . . I imagine I hated him . . . was a tyrant, and I remember one time, when I was just a kid and we were in the mountains, he beat me and a lot of people were looking on. I've tried to forget that for a long time. "Now"—Quayle shrugged—"it doesn't seem quite so important."

"I'm not a psychologist," Burkhalter said. "If you want my personal reaction, I'll just say that it doesn't matter. You're not a little boy any more, and the guy I'm talking to and working with is the adult Quayle."

"Hm-m-m. Ye-es. I suppose I knew that all along—how unimportant it was, really. It was simply having my privacy violated. . . . I think I know you better now, Burkhalter. You can—walk in."

"We'll work better," Burkhalter said, grinning. "Especially with Darius."

Quayle said, "I'll try not to keep any reservation in my mind. Frankly, I won't mind telling you—the answers. Even when they're personal."

"Check on that. D'you want to tackle Darius now?"

"O.K.," Quayle said, and his eyes no longer held suspicious wariness. "Darius I indentify with my father—"

It was smooth and successful. That afternoon they accomplished more than they had during the entire previous fortnight. Warm

with satisfaction on more than one point, Burkhalter stopped off to tell Dr. Moon that matters were looking up, and then set out toward home, exchanging thoughts with a couple of Baldies, his co-workers, who were knocking off for the day. The Rockies were bloody with the western light, and the coolness of the wind was pleasant on Burkhalter's cheeks, as he hiked homeward.

It was fine to be accepted. It proved that it could be done. And a Baldy often needed reassurance, in a world peopled by suspicious strangers. Quayle had been a hard nut to crack, but—Burkhalter smiled.

Ethel would be pleased. In a way, she'd had a harder time than he'd ever had. A woman would, naturally. Men were desperately anxious to keep their privacy unviolated by a woman, and as for non-Baldy women—well, it spoke highly for Ethel's glowing personal charm that she had finally been accepted by the clubs and feminine groups of Modoc. Only Burkhalter knew Ethel's desperate hurt at being bald, and not even her husband had ever seen her unwigged.

His thought reached out before him into the low, double-winged house on the hillside, and interlocked with hers in a warm intimacy. It was something more than a kiss. And, as always, there was the exciting sense of expectancy, mounting and mounting till the last door swung open and they touched physically. *This,* he thought, *is why I was born a Baldy; this is worth losing worlds for.*

At dinner that rapport spread out to embrace Al, an intangible, deeply-rooted something that made the food taste better and the water like wine. The word *home,* to telepaths, had a meaning that non-Baldies could not entirely comprehend, for it embraced a bond they could not know. There were small, intangible caresses.

Green Man going down the Great Red Slide; the Shaggy Dwarfs trying to harpoon him as he goes.

"Al," Ethel said, "are you still working on your Green Man?"

Then something utterly hateful and cold and deadly quivered silently in the air, like an icicle jaggedly smashing through golden, fragile glass. Burkhalter dropped his napkin and looked up, profoundly shocked. He felt Ethel's thought shrink back, and swiftly reached out to touch and reassure her with mental contact. But across the table the little boy, his cheeks still round with the fat of babyhood, sat silent and wary, realizing he had blundered, and seeking safety in complete immobility. His mind was too weak to resist probing, he knew, and he remained perfectly still, waiting, while the echoes of a thought hung poisonously in silence.

Burkhalter said, "Come on, Al." He stood up. Ethel started to speak.

"Wait, darling. Put up a barrier. Don't listen in." He touched her mind gently and tenderly, and then he took Al's hand and drew

the boy after him out into the yard. Al watched his father out of wide, alert eyes.

Burkhalter sat on a bench and put Al beside him. He talked audibly at first, for clarity's sake, and for another reason. It was distinctly unpleasant to trick the boy's feeble guards down, but it was necessary.

"That's a very queer way to think of your mother," he said. "It's a queer way to think of me." Obscenity is more obscene, profanity more profane, to a telepathic mind, but this had been neither one. It had been—cold and malignant.

And this is flesh of my flesh, Burkhalter thought, looking at the boy and remembering the eight years of his growth. *Is the mutation to turn into something devilish?*

Al was silent.

Burkhalter reached into the young mind. Al tried to twist free and escape, but his father's strong hands gripped him. Instinct, not reasoning, on the boy's part, for minds can touch over long distances.

He did not like to do this, for increased sensibility had gone with sensitivity, and violations are always violations. But ruthlessness was required. Burkhalter searched. Sometimes he threw key words violently at Al, and surges of memory pulsed up in response.

In the end, sick and nauseated, Burkhalter let Al go and sat alone on the bench, watching the red light die on the snowy peaks. The whiteness was red-stained. But it was not too late. The man was a fool, had been a fool from the beginning, or he would have known the impossibility of attempting such a thing as this.

The conditioning had only begun. Al could be reconditioned. Burkhalter's eyes hardened. And would be. *And would be.* But not yet, not until the immediate furious anger had given place to sympathy and understanding.

Not yet.

He went into the house, spoke briefly to Ethel, and televised the dozen Baldies who worked with him in the Publishing Center. Not all of them had families, but none was missing when, half an hour later, they met in the back room of the Pagan Tavern downtown. Sam Shane had caught a fragment of Burkhalter's knowledge, and all of them read his emotions. Welded into a sympathetic unit by their telepathic sense, they waited till Burkhalter was ready.

Then he told them. It didn't take long, via thought. He told them about the Japanese jewel-tree with its glittering gadgets, a shining lure. He told them of racial paranoia and propaganda. And that the most effective propaganda was sugar-coated, disguised so that the motive was hidden.

A Green Man, hairless, heroic—symbolic of a Baldy.

And wild, exciting adventures, the lure to catch the young fish whose plastic minds were impressionable enough to be led along the roads of dangerous madness. Adult Baldies could listen, but they did not; young telepaths had a higher

threshold of mental receptivity, and adults do not read the books of their children except to reassure themselves that there is nothing harmful in the pages. And no adult would bother to listen to the Green Man mindcast. Most of them had accepted it as the original daydream of their own children.

"I did," Shane put in. "My girls—"

"Trace it back," Burkhalter said. "I did."

The dozen minds reached out on the higher frequency, the children's wavelength, and something jerked away from them, startled and apprehensive.

"He's the one," Shane nodded.

They did not need to speak. They went out of the Pagan Tavern in a compact, ominous group, and crossed the street to the general store. The door was locked. Two of the men burst it open with their shoulders.

They went through the dark store and into a back room where a man was standing beside an overturned chair. His bald skull gleamed in an overhead light. His mouth worked impotently.

His thought pleaded with them—was driven back by an implacable deadly wall.

Burkhalter took out his dagger. Other slivers of steel glittered for a little while—

And were quenched.

Venning's scream had long since stopped, but his dying thought of agony lingered within Burkhalter's mind as he walked homeward. The wigless Baldy had not been insane, no. But he had been paranoidal.

What he had tried to conceal, at the last, was quite shocking. A tremendous, tyrannical egotism, and a furious hatred of nontelepaths. A feeling of self-justification that was, perhaps, insane. *And—we are the Future! The Baldies! God made us to rule lesser men!*

Burkhalter sucked in his breath, shivering. The mutation had not been entirely successful. One group had adjusted, the Baldies who wore wigs and had become fitted to their environment. One group had been insane, and could be discounted; they were in asylums.

But the middle group were merely paranoid. They were not insane, and they were not sane. They wore no wigs.

Like Venning.

And Venning had sought disciples. His attempt had been foredoomed to failure, but he had been one man.

One Baldy—paranoid.

There were others, many others.

Ahead, nestled into the dark hillside, was the pale blotch that marked Burkhalter's home. He sent his thought ahead, and it touched Ethel's and paused very briefly to reassure her.

Then it thrust on, and went into the sleeping mind of a little boy who, confused and miserable, had finally cried himself to sleep. There were only dreams in that mind now, a little discolored, a little stained, but they could be cleansed. And would be.

THE END.

Lilies of Life

by MALCOLM JAMESON

There was a disease on Venus, and the natives seemed to have a cure. But the symbiosis involved was madder even than the usual madness of Venus' life-cycles—

Illustrated by Orban

The test tube dropped to the floor with a crash. A wisp of acrid fume trailed up from it.

Parks, ignoring it and gripping the edge of the table, moaned, "Something's happened to my schedule—this isn't due for an hour yet—"

He broke off, shivering.

Maxwell looked sharply at him from where he sat, and then glanced at the clock. It was only two.

Three o'clock was when their next shots were due. But there was no doubt that Parks was working himself into a seizure. Already his hands were twitching and jumping convulsively, and the telltale tics of the deadly Venusian swamp jitters were commencing to go to work. Parks' face was no longer his own, but a travesty of a human countenance—a wildly leering, alternately staring and squinting mask of agony.

Maxwell rose and pushed back his chair with a sigh. If Parks was going that way, so soon would he. Unhurriedly he walked to the medicine cabinet and took out two shiny syringes. He filled them both from their supply of ampules. Paracobrine was not much good, but it was the best men knew. Then he laid them by the "wailing wall"—an iron railing firmly secured to heavy stanchions—and went to where the now whimpering Parks huddled on his stool.

"Come on, old man," he said gently, "let's get it over with."

Parks allowed himself to be led to the place and long practice did the rest. By the time Maxwell had the needle in and the plunger thrust home Parks was gripping the rail as if he meant to squeeze it flat. Maxwell took a deep breath. It was his turn. He rolled up his sleeve and forced the amber liquid into his own veins.

For five interminable minutes the two men clung there, writhing and sobbing as the fiery stuff coursed through their bodies—molten iron, searing acid, soul-destroying agony. And then it passed. Fingers relaxed their deathlike hold, muscles untensed, and their gasping again became breathing.

"I . . . won't . . . go . . . through . . . this . . . . again—" began Parks through clenched teeth, "I—"

"Oh, yes you will," said Maxwell grimly "We always say that . . . everybody says it . . . but still we go on. You know the alternatives, don't you?"

"I know them," said Parks, dully. Without paracobrine the jitters became a permanent condition, not a recurrent one, and one that ended necessarily in madness. The other course was the rope, or the jump from a high place, or a swifter poison.

"All right, let's get back to work then. What was in that tube?"

"Experiment eleven-o-four. It doesn't matter now. I used the last of the snooker bark. We haven't the stuff to duplicate it with. Not unless Hoskins smuggles in another supply."

"Forget it then. Let's have a look in the ward. Maybe eleven-o-three did the trick."

Parks followed silently, gradually pulling himself back into his normal self. Next time he would know to advance the clock. Paracobrine was no fun, but it was less hard to take in a calm mood than after the attack had begun.

The ward brought the usual disappointment. The monkey in the victim cage was gibbering hideously in his last convulsions. Within a minute is would be as dead as the limp piles of inoculated guinea pigs

in the pens beyond. The last try at the formula had not worked. Two thirds the human race would have to go on suffering for awhile, for a better answer to the swamp jitters than paracobrine was not yet.

Maxwell looked at the other cages. There were still some monkeys and guinea pigs, and there were a few other combinations yet to try. Men in vital research must be resilient. A thousand or so failures was nothing. It is a part of the business.

"I think," he started to say, "that we had best—"

"I'll get the door," Parks interrupted, as a discreet tapping broke in on them. "Sounds like Hoskins."

It was Hoskins, Hoskins the interplanetary smuggler. He carried a heavy satchel and wore a sour grin.

"Bad news, fellows," he said, setting down his bag. "No more stuff out of Venus from now on. They've trebled the offplanet patrol and tightened up on port inspection. Tony was pinched, and his ship and the stuff for you with it. They threw him in the clink, of course, and burned the cargo. That means you won't get any more snooker bark, or gizzle bugs, twangi-twangi melons or any other of that stuff. Shan Dhee has chucked his job, which leaves me without a buyer. I'm going out of business. Sorry."

"There's *nothing* for us?" asked Parks, aghast. He clung fiercely to his theory that the specific for the jitters would be found only in some organic product of Venus, where the disease originated. It would be there, if anywhere, that the virus' natural enemies would have evolved. But lately other Venusian maladies had been turning up and the quarantine authorities must have ordered a stricter embargo. Without smuggled organics, his and Maxwell's hands would be tied.

"I've got this stuff," said Hoskins, opening the bag. "It's not the sort you usually order, but I happen to have it on hand and want to close it out. It's loot Shan Dhee got out of a Tombov temple he once robbed. It ought to go to a museum, but the stuff's hot and they ask too many questions. Could you use it?"

He dug into the bag and came up with a figurine. It was a piece of the curious coffee-colored semi-jade regarded as a sacred stone by the savage Tombovs, and, considered as Tombov work, was extraordinarily finely executed. Its subject was a rotund, jolly old Tombov godlet, sitting comfortably on a throne with his pudgy hands clasped across his belly. About his neck hung a rope of what appeared to be large pearls, and he was crowned with a chaplet of swamp lilies. Lily plants grew all about the throne, and there the jade had been cunningly colored green by the application of a kind of lacquer—the pale-yellow lilies being similarly tinted.

"Shan Dhee says it is the Tombov God of Health, and the temple was the big one in Angra Swamp where the Angra tribes hold their orgies."

"Ugh!" shuddered Parks. Those who had seen them reported the

Tombov ritual was not a pretty thing to watch. "No, it's no good to us."

"I don't know," said Maxwell, slowly. "God of Health, you say? Mm-m. Come to think of it, most Tombovs are immune to the jitters, or were until our pioneers went there. Maybe we ought to study it. How much?"

"Nothing, to you," said Hoskins. "You've been good customers. Take it for cumshaw. But I'll have to ask money for these."

He dug again into the bag and came out with a double handful of beautiful, iridescent spherelets. They were each about the size of a golf ball, and looked for all the world like so many soap bubbles—thin, fragile, and shimmering. Yet when Maxwell examined one he found it to be exceedingly hard, though almost weightless, and it appeared to be made of the toughest imaginable crystal.

"What are they?"

"Gems, I guess," shrugged Hoskins. "They came out of the temple, too. Shan Dhee said they hung around the neck of the big idol like a necklace—roped together with wisps of grass. See, the little idol wears a replica of it."

Maxwell considered the jewels, frowning. Hoskins added that the price would be a thousand for the lot. That was a lot of money, but what was money to men doomed to a lingering, fearful death? The baubles were somehow linked to the Tombov health rites, and the wild Tombov—though a filthy beast—was notoriously healthy. It was only the civilized ones who withered and died. It was doubtful that the gems themselves had any therapeutic value, but they came out of a temple. Therefore they were symbolic of something or other, a possible clue to the real secret.

Maxwell hauled a drawer open and swept the glistening spheres into it.

"Make out a check, Parks. I'm going to play a hunch."

Parks, still dazed from his premature seizure, nodded dumbly. And after Hoskins had gone, they took out the spheres again and huddled over them. Then they divided up the work and went at it.

Tests were applied, with results that were largely negative. The iridescent balls were acid-proof, shatter-proof, and exceedingly hard. But Maxwell managed to saw one in half, and found it empty, though as the saw first bit through the thin shell there was a sharp hissing as trapped inner gases escaped into the room. Parks was quick to catch a sample of the foul-smelling stuff, only to be baffled by the analysis. The organic gases of Venus have most complex molecular structures.

"Hey," yelled Maxwell, a little later, taking his eye away from the microscope. "I have some of that sawdust here. It isn't crystalline at all. It's definitely a cellular structure. These balls are certainly not minerals, but they are not plant or animal tissue either—not as we

know them. They're just—"

"Just Venusian," Parks completed for him, sighing. Anything that lived on Venus was a headache to the investigator. There was no perceptible borderline between flora and fauna, and there were times when both encroached into the mineral zone. Venusian life cycles made those of such devious transformations as the human tapeworm on Earth seem as bleakly simple as the reproductive processes of the amoeba. Parks knew of, to name just one, a sort of aquatic ant that was fertilized by clinging to the skin of eels, and which then crawled ashore and laid its eggs, the eggs subsequently growing up into masses of moss. Weird, featherless birds ate that moss and developed intestinal parasites. Those, upon deserting their host, became crawling ants, sprouted wings, and then took off for the ocean. It was merely the usual Venusian complicated symbiotic set-up; the ants being somehow necessary to the survival of the eels, and in their later forms to the birds, both as food and as digestive enzymes. Scientists who attempted to follow through lost themselves in a maze of yet other ramifications.

Maxwell and Parks stared at one another.

"There's only one thing to do," said Maxwell. "Hoskins can't bring any more stuff to us, we'll have to go to it. I want to know why wild Tomboys don't have jitters, and why lilies are sacred to them, and what these things are. We're going to Venus."

Their arrival at Port Angra was not a cheerful occasion. Their arms and legs were puffed and aching from scores of prophylactic shots. Moreover, they had had to sign away most of their civil rights. Despite all precautions, white men rarely could remain more than three months on Venus without picking up one or more virulent infections, any of which would prevent his ever returning to sanitary Earth. People therefore went there at their own risk, absolving the government and all others concerned in advance.

There was also nothing reassuring about their fellow passengers. A few were desperate scientists like themselves, stragglers in the procession that had been going by for years. Others were missionaries, gone to relieve brothers whose three months were about up. For similar reasons there were relief quarantine enforcement officers along, and representatives of the Radioactive Syndicate, come to take their turn at keeping the uranium mines going. Most regarded their assignments with unalloyed distaste.

They came down in the inevitable sticky, yellow, hot mist, and landed in a clearing made in a lush jungle. Awaiting them was a pathetic sight —rows and rows of grounded palanquins wearing the weathered and mildewing white and red insignia of the Red Cross. In litters lay the men they were coming to relieve, mere wrecks of what they had been a few short weeks before. For not a few of them their coming to the port was no more than a hopeless gesture. Whether they were ac-

cepted for the passage home would depend upon the doctors.

"This is some place," growled Parks.

"When the jitters hit you again," reminded Maxwell grimly, "it won't matter. Any place you happen to be in will be that."

He studied the ranks of tamed Tombovs standing patiently beside the grounded chairs. They were the bearers, the helots of this hole. They stood gaunt and shivering, for they were sick men too, sicker even than the whites. It was thought profitable to keep Earthmen alive by periodic doses of paracobrine, but a waste of good drugs when it came to natives. The swamps were full of them, and the promise of tobacco—the one non-native commodity valued by the savages—always filled up the ranks again. As Maxwell looked, one of the chair bearers jerked into violent convulsions and fell writhing and howling to the muddy ground. No one noticed. It was too routine. Tomorrow, maybe, the scavengers would attend to it.

The Tombov was remarkably humanoid, grotesquely so, more so than the great apes of Earth. The salient difference was in the feet, huge splayed pedals that served as mudshoes, distributing the body weight over a larger area so that the Tombov could walk safely on the thin crust that topped the viscous mire of the swamplands. They were ducklike feet, mostly membrane spread between long tapering toes.

The port captain came up and called litters for the new arrivals, one each for the men, and additional ones for their equipment. Then he barked out an order in the harsh Tombov tongue and the bearers picked up their loads and went on splashing away.

Despite the poor visibility, Maxwell found it an interesting ride. There was a feeling of luxuriousness in being carried along over impossibly sloppy ground on the bare shoulders of a half dozen jogging slaves. And he was interested and at the same time appalled at the riot of vegetation he glimpsed on all sides. There was an infinitude of species of every kind of living thing, an overwhelming field for scientific study. With human mortality rates what they were, man would probably never know much about Venusian life forms. For the animals, if they were animals, that peered out from time to time, were as weird and incredible as the fantastic flowering lianas, smoking bushes, and trees that gave off metallic, cracked-bell clanking sounds.

His momentary sense of well being abruptly departed from him as their caravan hove into a clearing and trotted past a low mud wall. Over the group of buildings beyond the wall flew the drab banner of the U. M.—United Missions. He saw the corrals into which newly arrived Tombovs were being herded, preparatory to their being "processed" for the slave market. For since Earth men could not work and survive in that vile climate, they had to have natives as the beasts of burden. It was natives who dug the uranium, who did the

building, and the hauling. And heathen Tombovs would not do. They were too intractable.

Maxwell thought cynically on the conversion statistics, of the thousands run through the salvation mills each year. It was not basically an evangelical proposition. It was an economic necessity. For all Earthmen, whatever their faith, agreed on one point—the Tombov in the raw was a lazy, lascivious, irresponsible rascal. The wild native was a chronic liar, a congenital thief, and what displeased him he was prone to kill out of hand, and his means of doing it were rarely nice. He saw no point in working, for natural food was on every hand. He was tough; therefore physical punishment meant nothing. His philosophy was virtually nil, so he was deaf to abstract appeal. In short, to be useful, he *had* to be Christianized.

A turn of the road put the mission behind, and its hateful appendage—the labor mart. Ahead were the first straggling huts of Agra. They passed the inevitable dispensary, with its white-coated attendants and wailing wall. Then they stopped at a low building beyond whose sign read:

Bureau of Research Co-ordination.

The doctor in charge was a haggard, sallow man with woebegone eyes. His hopeless expression did not change while Maxwell was outlining his theory. When he stopped the doctor shook his head.

"A chimera," he said, "a waste of work. Others have come to Venus with the notion that it was something the Tombovs ate or drank that made them immune to jitters. Every item of their diet has been analyzed many times, even the foul fen air they breathe. The results were always negative. Nor is there any appreciable difference between Tombov blood types and ours, or their vitamin reaction. We think now that the so-called Tombov immunity is due to nothing more mysterious than natural selection. The ones now in the swamps are descendants of those who simply could not be killed by the disease, and therefore have great resistance."

"Nonsense," said Maxwell, nettled by the negativeness of the man. "What becomes of their natural resistance when they are converted? Baptism has no effects on antibodies. Did it ever occur to you that there may be something they do at their secret rites which makes the difference?"

"Religion," said the doctor, stiffly, "is a subject I never discuss, and the less said about the abominable rites of the swamp savages the better. I assure you, sir, if you knew the Tombov as well as we here do—"

Maxwell snorted and turned away.

"Let's go, Parks. It's the 'old China hand' story all over again. When a scientist lets himself be blinded by prejudice he isn't a scientist any more."

At the dispensary they asked the

whereabouts of Hoskins' former scout, Shan Dhee. According to Hoskins, Shan Dhee was a convert who backslid after living with the whites awhile and turned native again. It was because he promptly contracted the jitters and had sense enough to run away. The result of being apostate from both camps was that he became a sort of pariah, tolerated, but distrusted by both races. Yet he served well as a go-between because he was the one heathen Tombov who knew the ways of Earthmen and spoke their language, though Hoskins warned it would be in a variety of code.

"Shan Dhee?" said the interne, lifting an eyebrow in surprise that a respectable person should inquire about one so shifty and disreputable. "Why, in jail, probably. If not, you'll find him hanging around one of the dives down at the Edge, loaded to the gills with zankra. Take my advice and have a patrolman go along, if you have to see him. When a convert goes bad, he's *bad.*"

"Oh, we'll manage," said Maxwell. The anti-Tombov prejudice seemed well distributed. He was still inclined to rely on Hoskins' recommendation.

The zankra joint was not a savory place. It was dark and dirty, and very, very smelly. Its patrons,

white men who couldn't stand the gaff and had been barred from going home by reason of their condition, lay all about on dirty mats. They were dead to the world, even if their muscles did occasionally knot up in spasmodic twitchings. This was the way they chose to ease their doom—they had gone the zankra route. For zankra, though not a cure for anything, brought blissful anaesthesia, being as it was a natural elixir—a blend of protomezyl alcohol and a number of potent alkaloids. It was cheap, too, since the gourds of which it was the juice could be had for a copper coin or so. A gourd of it was just being broached as Maxwell and Parks walked in. They saw a native squat by the door and jab a hole in the fruit so he could insert a sucking quill.

"We're Mr. Hoskins' friends," Maxwell said to him. "Where can we find Shan Dhee?"

The Tombov studied him shiftily. There was some hesitation, and then, "Me Shan Dhee."

Maxwell had also been studying him. He was gratified to note that the fellow seemed to be magnificently healthy. There was none of the residual tremor that persists even after paracobrine shots. Yet Shan Dhee's shoulders and arms bore mute testimony that he had been a jitters' victim at one time. They were covered with the scars of self-inflicted bites, usually a sure sign of an untreated case. The scars were very old, and confirmed in a way what Maxwell wanted to believe. The man had evidently been cured—a thing believed to be impossible. But how? By his reversion to his former pagan practices?

Shan Dhee turned out to be a poor subject. It was bad enough that he spoke the barbarous pidgin brought by the first missionaries, but he was also suspicious, stubborn, and evasive. By Maxwell's questions Shan Dhee at once divined that Maxwell knew that he had once robbed a temple, and he knew that if other Tombovs ever found that out he was sure to die horribly.

"No know what lily flower good for," he would say, averting his eyes. "Tombov no eat. Tombov wear. Lily flower no good Earthfellow. Kankilona come out of lily flower. Earthfellow kankilona no like. Earthfellow priestfellow say kankilona horres . . . horres*no*us monster. Earthfellow priestfellow wantchee kill all kankilona. Kankilona die, Tombov die. Die no good for Tombov. More better Earthfellow no see kankilona."

That was that. No amount of questioning could elucidate more. They had to guess at what sort of "horrendous monster" a kankilona might be. On Venus it could be anything from an ambulatory flytrap to a firebreathing dragon. All that was clear was that there was a relation between the lilies and the monsters, that the missionaries did not approve of them, and that the monsters were somehow necessary to Tombov well being.

Questions as to the iridescent, gas-filled spheres brought little that was comprehensible, though much later

it did come to have meaning. Shan Dhee tried desperately to duck the question, for evidently he had lied about them to Hoskins.

"Littily shiny balls no gems," he confessed at last. "Littily shiny ball no good at all. Littily shiny ball one day pretty . . . six, eight day more . . . no more littily shiny ball. All gone. Maybeso littily shiny ball papa-papa-fellow kankilona."

"He's lying," said Parks. "We've got eighteen of 'em at home in our vault. We studied 'em a lot longer than a week, and none of them vanished. I'd call 'em pretty permanent."

Shan Dhee refused to amplify. Maxwell noted the hinted link to the mysterious kankilona, but let it go and went straight to the purpose of his call. Would Shan Dhee fix it so they could attend a Tombov orgy?

Shan Dhee's reaction was close to terror. Tombov temples were strictly tabu to Earthmen at all times. They were even tabu to Tombovs, including the priesthood, except during the days of actual festival. The Tombovs would hardly dare slaughter the Earthmen if they were found desecrating the place—the Tombovs had learned that hard lesson long before—but what they would do to Shan Dhee was too dreadful to think about. Shan Dhee would steal, smuggle, even murder for them—if tobacco enough was to be had—but not that.

"Don't Tombov priests like tobacco, too?" Maxwell asked, softly.

It was a lucky question. It rang the bell. Shan Dhee reconsidered. He sipped zankra and made calculations on his fingers. In the end he yielded.

"Maybeso can do," he admitted, uneasily, "Maybeso Tombov priestfellow letchee Shan Dhee hidum Earthfellow godhouse-side, but priestfellow no likee Earthfellow in Tombov godhouse. Earthfellow no likee see Tombov eatchee kankilona. Earthfellow get sick. Earthfellow pukum. Earthfellow get mad. Earthfellow smashee Tombov godhouse. Earthfellow in godhouse no good. More better Earthfellow hidee outside."

Both investigators promised faithfully they would watch unseen. They would be the soul of discretion. And they would pay any reasonable price. They were not scoffers or reformers. They wanted only to know the secret of Tombov health. Shan Dhee relaxed. He even grinned a crooked grin.

"Tombov priestfellow more better Earthfellow priestfellow. Tombov wantchee long life *now,* swampside. Tombov no wantchee long life *bimebye,* Heavenside. Heavenside no good. Too far. Swampside more better."

Parks and Maxwell smiled. After all, they couldn't blame the poor devil. How could the warped missionary doctrine preached them be any solace for hard labor and suffering? Better good health now, and let them take their chances on Heaven. So they argued no further, but totted up the quantities of tobacco Chan Dhee said would be required.

It took three weeks of dreary slogging over slimy mud, sometimes proceeding by dugout canoe, before they came to the place of the Festival of Long-Life. Shan Dhee showed them the markers that set off the sacred areas. Until they were removed three days later it was forbidden for ordinary Tombovs to pass them. But Shan Dhee shot the clumsy craft ahead. His coming had been arranged. He directed the canoe on past the tripods of saplings with their warning plumed skulls. The sluggish lagoon narrowed. Presently they came in between two lily fields. Shan Dhee explained that there were only a few places where such lilies grew and that the penalty for taking one off holy ground was death.

Maxwell studied the plants with interest, but saw little to distinguish them from the Terran variety except their great size and yellow color. And then he was startled to see monstrous hairy creatures crawling around among them. For a long time he got only glimpses, and then he saw one entire. It was a sort of giant tarantula—a horror of mottled silky hair hanging from a bulbous, palpitating body as large as a basketball. There seemed to be a score of arching legs, each hairy and clawed at the tip. There were ugly, knifelike fangs, too, from which a greenish poison drooled. A cluster of luminous eyes were set above them, glaring venomously in shifting reds and violets.

"Kankflona," said Shan Dhee.

Parks shuddered. It was upsetting even to look on one. Had Shan Dhee said that the Tombovs *ate* them?

The lagoon shoaled and narrowed. In a moment Shan Dhee drove the dugout nose up onto a muddy bank. It was the island hummock of the temple grounds. They climbed out and dragged the canoe into the underbrush and hid it under broad leaves. Then they gathered up their baggage and went up onto the hummock.

It was a glade surrounded by heavy cypress, and under the trees were hundreds of little huts. In the distance stood the temple—an astonishing structure of gray stone, astonishing because the nearest solid ground was more than a hundred miles away. Only stubborn devotion could have carried those massive stones to where they were. But the temple's great portal was closed and barred. The whole place was deserted.

Shan Dhee disregarded everything until he could build their hiding place. It was a two-roomed hut he made for them, considerably apart from any other. As a tolerated outcast Shan Dhee said he was permitted to attend the festival, but he must keep his distance from the truly faithful. As it happened, his status was most convenient, for the two Earthmen could live in the rear, watching the show through peepholes, while Shan Dhee sat stolidly in the doorway, sure that no wild Tombov would venture near an untouchable. Shan Dhee said they could see all there was to see from there until the night of the culmination of the revels. By then the

Tombovs would be blind drunk and would not notice if they were being spied on from the darkness outside the temple door.

Maxwell and Parks laid out their gear. There were their food pellets and their store of tobacco twists that must be given to the priests. There was also their scientific paraphernalia—beakers and test tubes and reaction chemicals, and their all-purpose spectrographic camera. But the most essential item was their supply of precious paracobrine, for Parks was slipping fast, and needed shots at hourly intervals. They stowed that safely, and settled down to wait.

The subsequent week was not especially instructive, nor was it entertaining. During the first days the Tombovs began straggling in, filthy with swamp mud encrusted on them. They brought their women and children with them, and a tremendous number of zankra gourds. Each family settled into its own hut, and then proceeded to the tribal reunion. The affair was much like barbaric gatherings anywhere in the Solar System—attended by the monotonous banging on tom-toms; by wild, uninhibited dancing; by gorgings with food and drink. There were scenes of reckless drunkenness, but until the begining of the fifth day it was essentially a social gathering. It was not until the fifth day that the priests showed up.

The activities thereafter took on a different tinge. No longer did the Tombov braves lie around in drunken stupor until midafternoon. They were put to work. And their women were put to work.

They went out into the swamp, paddling along on their splayed, webbed feet. The men carried curious nets made of twisted small liana. The boys trailed them, bearing roomy cages made of a sort of wicker. For the women's part, their job seemed to be the gathering of lilies. They stripped the plants methodically, taking blooms and leaves alike, leaving little more than pulpy stubble behind. It was not until evening came and the men came back that Maxwell knew what they had gone for. They returned triumphantly with scores upon scores of captured kankilonas, the trapped arachnids ululating horribly in protest at their restricted movement. The priests opened the temple doors long enough to receive the spiders, and then closed them again.

That went on for three days more, but as the swamps were stripped of their leafy covering and crawling monsters, Maxwell made an astounding discovery. For a few minutes one day the sun came through—a rarity on cloudy Venus—and as it did a miracle seemed to happen. The dull mudflats became beds of scintillating fire. What he had bought from Hoskins as jewels lay thick everywhere. They were as numerous as the dead leaves of fall. Then the clouds took over again and the glow died.

"What do you make of it?" asked Parks, who was looking on

in wonder. "Could they be lily seed?"

"Hardly," said Maxwell. "They are too light and airy. Seeds have to sink into the soil to germinate. Those things won't even sink in water."

At last the final day of the festival came. Men and women dressed themselves in gala garments made from lilies. There were chaplets and leis, garlands and leafy headdresses. And they were drinking zankra in colossal doses. All afternoon there was unrestrained dancing, and toward dark the drunken choruses became a bedlam of hideous howling. Then the temple doors were thrown open wide, and torches lit inside.

"Pretty soon you Hoskins friendfellow see kankilona feast," remarked Shan Dhee. He looked worried, as if repenting the deal. "No letchee priestfellow catchee looksee." he warned. Maxwell and Parks repeated their promise.

It was near midnight when they decided the worshipers were so drunk that nothing would matter. Maxwell and Parks stole out of their hut and across the glade, being careful not to step on the many Tombovs who had already passed out. They stopped close to the great door and looked in. The orgy was at its height. They saw now how the feast was conducted. Two acolytes would hand up a squirming kankilona, stripped of its legs. The high priest would receive it, and then defang it with two swift jerks. The slimy fangs he would hurl into a basket at the foot of the chief idol; the carcass he would throw to the yelling celebrants. There would be a scramble for it, then a howl of disappointment as the unlucky ones watched the favored sink his teeth into the soft venom sac of the mangled tarantula.

Parks gripped Maxwell's arms.

"I . . . I've got to go back to the hut," he gasped.

"What's the matter?" asked Maxwell sharply. "Can't you take it? We're not squeamish missionaries."

"T-that's not it. I forgot my shot. See how I'm jumping? But you stick around. I'll be back in a jiffy."

Maxwell let him go. It was routine, more or less, and he did not want to miss any unexpected feature of the rites before him. He watched Parks disappear into the dark, and then started to turn his gaze back at the orgies.

He did not complete the movement. A surprisingly strong arm encircled him, and a husky knee entwined and gripped his. He knew from the wide flat foot that it was a Tombov that assailed him. Then there was a mocking voice in his ear—it was Shan Dhee's voice, and Shan Dhee was crazy drunk. His breath stank of zankra, and worse.

"Earthfellow wantchee long life, huh?" he taunted. "Okeh, okeh. Earthfellow catchee long life. Earthfellow catchee kankilona juice."

Maxwell felt himself being bent irresistibly backward to the peals of the maddened Tombov's maniacal laughter. A disgusting gob of hairy,

mushy something was slapped down on his face. He could not get his breath. He struggled and tried to cry out. It was what Shan Dhee wanted him to do. His teeth broke the tender membrane of the kankilona's venom sac. There was a gush of indescribably nauseating oily stuff. It stung his cheeks and shoulders. Maxwell felt utterly defiled and ashamed. He wanted to die then and there. And then something happened to him.

In one swift instant all the nausea and revulsion was swept away. In its place there was heavenly exhilaration, an exaltation that exceeded any ecstasy he had ever known. He was no longer a sick man; would never be one again. He was strong, well—a champion among champions. Life was wonderful. It had to be expressed. Maxwell cut loose with a war whoop that shook the glade. Then things went madly round and round. Lights flared up and faded. The howling within the temple died, dwindling into an infinitude of distance. After that Maxwell did not remember.

He awoke in what he thought must be the gray dawn of the morning after. He was lying face down in the muck outside the temple door. He lay very still for a moment, wondering when the inescapable headache would begin to rack him, for after the heady intoxication he now faintly remembered, it was unthinkable that there would not be one—and a super one at that. But there was no headache. There was no foul taste in the mouth. Maxwell had to admit he felt fine, which, under the circumstances, was humiliating. He wondered if he was altogether sane. He started to get up, gingerly, expecting to find himself full of Charlie horses. There weren't any. He was fit as a fiddle. He quit worrying and arose briskly, but promptly regretted it. His head thumped into something, and there was a crash. He stood amazed and aghast at what fell. It was three long sticks of wood lashed together and tied with a bunch of plumes. A skull lay grinning at him from the wreckage. During the night someone had erected that dire symbol over him—the warning that he was tabu—under a curse!

Maxwell shot a glance at the temple. Its doors were closed and barred. It was that way also in the glade. The huts were empty, the celebrants gone. The festival was over. Now everything was tabu. Maxwell's wrist watch said it was late afternoon. He had slept more than the night.

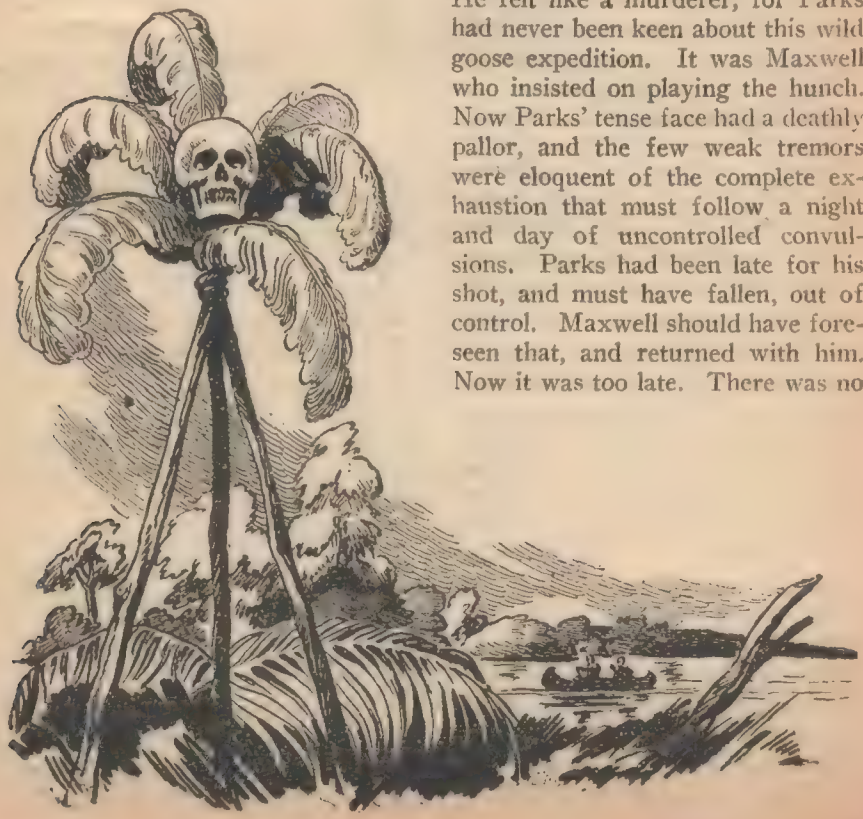
Then his heart jumped as he belatedly remembered Parks. Parks said he would come back. Where was he? Had Shan Dhee assaulted him, too? Maxwell looked around, but there was no sign of him. He started off across the glade in great bounding strides.

Before the hut he was brought to an abrupt stop. Another tabu tripod stood there. But there was more besides. On a stake nearby there was the grinning newly severed head of a Tombov, and scat-

tered about the foot of the stake were freshly picked bones—near human bones. The head was Shan Dhee's head. It meant that Shan Dhee had transgressed somehow, and Shan Dhee had paid the penalty. It was ominous. Maxwell feared to think of what he might find inside.

What was inside was bad enough. Both rooms were a shambles of smashed possessions. Most of the scientific equipment was hopelessly ruined, and food pellets were mixed indiscriminately with spilled chemicals. Every scrap of the tobacco was gone. But far worse, the whole interior reeked of paracobrine. Shattered ampules and broken syringes explained that readily enough. The looters, Nazilike, had destroyed what they did not value themselves.

At the moment none of that bothered Maxwell overmuch. It was Parks he wanted to find. And find him he did, half hidden beneath a pile of torn clothes. Maxwell uncovered him and knelt beside him, staring at him in bitter dejection. He felt like a murderer, for Parks had never been keen about this wild goose expedition. It was Maxwell who insisted on playing the hunch. Now Parks' tense face had a deathly pallor, and the few weak tremors were eloquent of the complete exhaustion that must follow a night and day of uncontrolled convulsions. Parks had been late for his shot, and must have fallen, out of control. Maxwell should have foreseen that, and returned with him. Now it was too late. There was no



more paracobrine. By morning Parks would be dead.

Maxwell sat for minutes, torturing himself. Then, of a sudden, a great light dawned on him. Why, he himself had missed at least two shots, and he felt fine! Unbelieving, he stretched out his arm. There was not so much as the hint of a tremor. What . . . why—

In another instant Maxwell was outside, ransacking abandoned huts. In a little while it would be deep twilight, and he had no time to lose. In the third hut he found a kankilona net. In another a broken cage, which he speedily repaired. Then he set off for the swamp's edge.

Maxwell quickly discovered that catching wily kankilonas alive was work that required men in gangs. The first several he spotted eluded him. The fourth one squared off and circled, warily fighting back. Maxwell was in no mood to quibble. Did kankilona venom lose its potency when the spider died? He couldn't know. But he knew he had to have some—of *any* strength—and quickly. He hurled his knife into the monster and watched it die. Then, lacking any kind of container, he tore off part of his shirt and dipped it into the ebbing poison. He ran back to Parks with that.

"Open your mouth, old man," he coaxed, but there was no response. Maxwell pried the jaws apart and blocked them. Then, drop by drop, he wrung nauseous oil out of the rag. Parks winced and tried to avert his head, but he was too weak. He gulped the stuff down, perforce. Maxwell fed it all, then waited.

The reaction was mercifully quick. Within seconds Parks' almost imperceptible breathing deepened, and his absent pulse returned. Slowly the iron-set neck muscles softened, the face relaxed, and there was a show of warming pink. In a little while Parks was sleeping peacefully. Maxwell examined him carefully from head to foot. There were no tremors. Not any. Maxwell heaved a big sigh of relief. Then he lit a torch. He had to do something about retrieving those food pellets.

Miraculous as the newfound remedy was, Parks' convalescence was slow. Either because he was so far gone in the beginning, or because the venom was not strictly fresh. His complete recovery was a matter of weeks, not hours or days, and in that time Maxwell had the opportunity to observe many things.

He kept a sharp watch on the swamp. He wanted to see what happened to the crystalline spheres, which Shan Dhee had said would vanish after awhile. He put on mudshoes and gathered a few and stored them in the hut. Then he maintained a vigil at the hummock's edge.

Nothing whatever happened for almost a week, and when it did happen, it happened at night. It was by the purest chance that Maxwell couldn't go to sleep, and walked out into the glade for more air. It was then he saw the shimmering violet light that seemed to pervade the entire swamp area. It was as if the mudflats were a bed of smol-

dering anthracite, dimly lit by flickering bluish flame. Maxwell went back to the hut for the torch and mudshoes. Then he investigated.

What he discovered was a horde of sluggish crawlers, creatures not too distantly related to the queer Australian platypus. Many were feeding noisily on the lily stubble, but most just lay, as if entranced, staring at the crystalline spherelets. It was the light of their violet eyes that furnished the illumination, a fact that did not astonish Maxwell. The majority of Venusian fauna *had* luminous eyes. What did bowl him over was what the light did to the shimmering balls. They shrank, and shrank. They dwindled to mere pellets, hard, and relatively heavy. Then they were no more. There were only bubbles to mark the spot where they had sunk into the mire. Maxwell pocketed several of the shrunken balls just before they disappeared.

The next day he dissected one. It was now obviously a seed, perhaps a lily seed. It was one more curious example of the deviousness of Nature. Apparently in its first state it was infertile, and therefore of a shape and weight which would keep it on the marsh surface. Then, perhaps by symbiotic impulse, the platypus creatures were attracted to it, gazed upon it with their violet rays, and somehow fertilized it. Whereupon it planted itself by gravity.

Maxwell followed through on that theory. That night he went into the swamp differently armed. He carried a bundle of dry sticks, and the spectrographic camera. He recorded the exact composition of the violet light, and noted the time it was applied. Then he marked a number of the bubbly places with his sticks. If lilies came up there, the spheres were lily seeds.

The next day he reversed his camera, making it a projector. He duplicated the platyputian light and shed it on the crystalline balls he had retrieved first. They did shrink into seed. He had at least one bit of positive proof. Then he planted them at a marked spot.

Slowly Parks improved. For several days Maxwell sought and found more spiders, but each day they grew scarcer. There came a day when there were none at all. The festival apparently had been timed to coincide with their greatest density. When would the new crop of them come, and from where? Maxwell thought on that, and began the study of the small pile of carcasses piled outside the hut. He hoped to learn something about the reproduction methods of the kankilona.

All but one of his dissections were negative. In that one he found an object that definitely jolted him. It was obviously an egg. But the kankilona egg was one of those crystalline balls! He now had one more link in its life cycle. He would have to wait for the rest of it to develop.

He had to wait for another reason. Parks was gaining, but he would not be able to travel under his own steam for some time to

come. On the way back they would not have the assistance of Shan Dhee. Maxwell wondered whether the angry priests had left them the canoe. He dashed off worriedly to investigate.

The dugout was safe where they had left it. Maxwell eased it into the water and tried it out. And while he was learning the trick of handling it, he paddled it a way down the lagoon. He backed water vigorously as he neared the tripod tabu signs that marked the boundary of the lily reservation. Just beyond there was an encampment of Tombov braves. It was a troubling discovery.

But a moment later he was a little bit relieved. A Tombov had spotted him just as he sighted them, and for a long minute both men stared at each other. Other Tombovs got up and looked, stolidly inexpressive. They made no outcry or hostile gesture, and as Maxwell turned the dugout about and headed back toward the temple clearing, the savages sat down again, as if the incident was closed.

It was Parks who guessed the purpose of the outpost. He was strong enough to talk, then, and was following Maxwell's theories with great interest.

"This kankilona business is the Tombov's big secret. They know by now how selfish the Earthman is, and how ruthlessly and wastefully he exploits. They don't want to kill us—if they had, they would have done it the night they left. But they are not going to let us get back to Angra with a live spider, or its egg, or any other thing they value. If we leave here alive, it will have to be barehanded."

"I get it," said Maxwell, gloomily. "They know, as you and I do, that if our race learned about spider venom, swarms of humans would invade these swamps and exterminate the genus in a single season. There just aren't enough kankilona. They would go the way of the bison and the dodo. And then we would be in a fix."

"Right," agreed Parks. "What we ought to do of course, is analyze that poison and see what ingredient makes it work. But our stuff is smashed. If we can't take back a specimen of it, all this has gone for nothing."

"We'll see," said Maxwell.

Meantime lily plants were sprouting where the ball-seeds had sunk. Soon the plants would be maturing. Then it would be time for another festival. They wanted to leave before that came, and they *had* to leave for a still more urgent reason. If they did not get back to Angra soon, their stay would overstretch the six-months time limit. Nothing would convince stupid quarantine officials that they weren't crawling with every variety of Venusian virus.

The first lilies were well in bloom the day they climbed into the dugout for the trip back. Maxwell shunted the canoe over close to a stand of the flowers, and plucked one. It was a very curious blossom, lacking either stamen or pistil. It was a sexless plant. But he observed a fatty swelling in one of

the lush petals. He slit it open and laid bare a small tumor. He cut into that. Dozens of tiny black objects scuttered out, like ants from a disturbed hill. They were baby kankilona!

"Well, that's that," said Maxwell, dropping the torn lily into the lagoon. "Now we have the whole story. Lilies beget spiders, spiders lay eggs, friend platypus comes along and the egg becomes a lily seed. That is where we came in."

"And," supplemented Parks, "kankilonas are health-giving, so *after* they have laid their eggs, the Tombovs come and eat them. The so-called temple jewels, I suppose, are simply a reserve seed crop in case of a drought."

"Drought on Venus," laughed Maxwell. "You're crazy." But he got the idea.

At the edge of the lily swamp the Tombovs looked them over. They were grave and silent, and offered no violence, but they were thorough. Their search of the boat revealed no contraband. A surly chieftain waved in the general direction of Angra. Maxwell dipped his paddle in and thrust the dugout ahead.

"It's tough," remarked Parks, regretfully, "but at least you and I are cured. On another trip we may have better luck."

"We're not cured," said Maxwell, grimly. "Our cases are arrested, that's all. The Tombovs do this twice a year, you know. But we have succeeded better than you know. The proof of it is here."

He tappe dthe note book where he had noted the spectrum of the platypus gaze.

"At home," he said, "we have a

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lot of kankilona eggs, and we know how to activate them. We can start in a properly humidified hothouse for our first few batches. After that we'll expand. The world need never know that what they're taking is a distillation of kankilona poison. They'll probably label it Nixijit, or something cute like that."

"Oh, well," said Parks, irrelevantly, "I suppose the Congo Valley won't be so bad."

"Nothing is ever as bad as it seems," said Maxwell.

A month later he made the same observation in a different form. They were on the homebound liner, and were among the few well enough to sit up and enjoy the lounge. A pest of a missionary came over and dropped into a seat beside him.

"It's great to be getting back to God's footstool," he wheezed. "What a cross I've had to bear working with those beastly Tombovs. Ugh! A race of brutes, steeped in the vilest superstitions and practicing the most abominable rites. Our own primitives had some horrible customs, but the Tombov culture hasn't a single redeeming feature."

"Oh," said Maxwell, screwing up one eye and smiling faintly, "I wouldn't say *that*."

THE END.

THE ANALYTICAL LABORATORY

Herewith the report on the November Astounding. The trouble with this form of report—of anything short of a two page analysis of general reader reactions as judged from the letters—is that it doesn't establish the take-off point. That is, it's somewhat like saying that food P is better than food T this month, but last month food B wasn't as good as food R. Most people will agree that Parsnips are a little better than Turnips, the Beefsteak these days isn't as good as Roast turkey. But if it come to an argument as to which is better among roast turkey, lamb, beef, and pork tenderloin, there's apt to be a scattering of opinions. I imagine that the pork would usually come in in last place.

Now I can list the relative positions of stories in a given issue; what I really need is some sort of base-index—something that says we're deciding whether turkey or roast beef is first, not that parsnips are less unacceptable than turnips.

This month, we seem to have had a turkey-vs.-roast beef argument. Every story was voted first by some reader; practically none of the letters panned any story, even the #6 on their particular list. The point score came out:

Place	Story	Author	Points
1.	Killdozer	Theodore Sturgeon	2.25
2.	Alien Envoy	Malcolm Jameson	2.71
3.	When The Bough Breaks	Lewis Padgett	3.15
4.	Desertion	Clifford D. Simak	3.19
5.	The Harmonizer	A. E. van Vogt	4.00

THE EDITOR.

Wanted—An Enemy

by FRITZ LEIBER, Jr.

The Pacifist was ingenious enough as an inventor. But he was hopelessly naive when it came to the reactions of intelligent beings. He—strange of a Pacifist—wanted an enemy. His error!

Illustrated by Williams

Mr. Whitlow hits on a new scheme for ending war—and as usual rushes off without exploring the consequences.

The bright stars of Mars made a glittering roof for a fantastic tableau. A being equipped with retinal vision would have seen an Earthman dressed in the familiar coat and trousers of the twentieth century standing on a boulder that put him a few feet above the rusty sand. His face was bony and puritanic. His eyes gleamed wildly from deep sockets. Occasionally his long hair flopped across them. His lips worked vociferously, showing

big yellowed teeth, and there was a cloud of blown spittle in front of them, for he was making a speech—in the English language. He so closely resembled an old-style soapbox orator that one looked around for the lamp-post, the dull-faced listeners overflowing the curb, and the strolling cop.

But the puzzling globe of soft radiance surrounding Mr. Whitlow struck highlights from enamel-black shells and jointed legs a little resembling those of an ant under a microscope. Each individual in the crowd consisted of a yard-long oval body lacking a separate head or any sensory or other orifices in its gleaming black surface except for a small mouth that worked like a sliding door and kept opening and closing at regular intervals. To this body were attached eight of the jointed legs, the inner pairs showing highly manipulative end-organs.

These creatures were ranged in a circle around Mr. Whitlow's boulder. Facing him was one who crouched a little apart from the rest, on a smaller boulder. Flanking this one, were two whose faintly silvered shells suggested weathering and, therefore, age.

Beyond them—black desert to a horizon defined only by the blotting out of the star fields.

Low in the heavens gleamed sky-blue Earth, now Mars' evening star, riding close to the meager crescent of Phobos.

To the Martian coleopteroids this scene presented itself in a very different fashion, since they depended on perception rather than any elaborate sensory set-up. Their internal brains were directly conscious of everything within a radius of about fifty yards. For them the blue earthshine was a diffuse photonic cloud just above the threshold of perception, similar to but distinct from the photonic clouds of the starlight and faint moonshine; they could perceive no image of Earth unless they used lenses to create such an image within their perceptive range. They were conscious of the ground beneath them as a sandy hemisphere tunneled through by various wrigglers and the centipedelike burrowers. They were conscious of each other's armored, neatly-compartmented bodies, and each other's thoughts. But chiefly their attention was focused on that squidgy, uninsulated, wasteful jumble of organs that thought of itself as Mr. Whitlow—an astounding moist suppet of life on dry, miserly Mars.

The physiology of the coleopteroids was typical of a depleted-planet economy. Their shells were double; the space between could be evacuated at night to conserve heat, and flooded by day to absorb it. Their lungs were really oxygen accumulators. They inhaled the rarefied atmosphere about one hundred times for every exhalation, the double-valve mouth permitting the building up of high internal pressure. They had one hundred percent utilization of inhaled oxygen, and exhaled pure carbon dioxide freighted with other respiratory excretions. Occasional whiffs of this exceedingly bad breath made Mr.

Whitlow wrinkle his flaring nostrils.

Just what permitted Mr. Whitlow to go on functioning, even speechifying, in the chill oxygen-dearth was by no means so obvious. It constituted as puzzling a question as the source of the soft glow that bathed him.

Communication between him and his audience was purely telepathic. He was speaking vocally at the request of the coleopteroids, because like most nontelepaths he could best organize and clarify his thoughts while talking. His voice died out abruptly in the thin air. It sounded like a phonograph needle scratching along without amplification, and intensified the eerie ludicrousness of his violent gestures and facial contortions.

"And so," Whitlow concluded wheezily, brushing the long hair from his forehead, "I come back to my original proposal: Will you attack Earth?"

"And we, Mr. Whitlow," thought the Chief Coleopteroid, "come back to our original question, which you still have not answered: Why should we?"

Mr. Whitlow made a grimace of frayed patience. "As I have told you several times, I cannot make a fuller explanation. But I assure you of my good faith. I will do my best to provide transportation for you, and facilitate the thing in every way. Understand, it need only be a token invasion. After a short time you can retire to Mars with your spoils. Surely you cannot afford to pass up this opportunity."

"Mr. Whitlow," replied the Chief Coleopteroid with a humor as poisonously dry as his planet, "I cannot read your thoughts unless you vocalize them. They are too confused. But I can sense your biases. You are laboring under a serious misconception as to our psychology. Evidently it is customary in your world to think of alien intelligent beings as evil monsters, whose only desire is to ravage, destroy, tyrannize, and inflict unspeakable cruelties on creatures less advanced than themselves. Nothing could be farther from the truth. We are an ancient and unemotional race. We have outgrown the passions and vanities—even the ambitions—of our youth. We undertake no projects except for sound and sufficient reason."

"But if that's the case, surely you can see the practical advantages of my proposal. At little or no risk to yourselves, you will acquire valuable loot."

The Chief Coleopteroid settled back on his boulder, and his thoughts did the same. "Mr. Whitlow, let me remind you that we have never gone to war lightly. During the whole course of our history, our only intelligent enemies have been the molluscoids of the tideless seas of Venus. In the springtide of their culture they came conquesting in their water-filled spaceships, and we fought several long and bitter wars. But eventually they attained racial maturity and a certain dispassionate wisdom,

though not equivalent to our own. A perpetual truce was declared, on condition that each party stick to its own planet and attempt no more forays. For ages we have abided by that truce, living in mutual isolation. So you can see, Mr. Whitlow, that we would be anything but inclined to accept such a rash and mysterious proposal as yours."

"May I make a suggestion?" interjected the Senior Coleopteroid on the Chief's right. His thoughts flicked out subtly toward Whitlow. "You seem, Earthling, to possess powers that are perhaps even in excess of our own. Your arrival on Mars without any perceptible means of transport and your ability to endure its rigors without any obvious insulation, are sufficient proofs. From what you tell us, the other inhabitants of your planet possess no such powers. Why don't you attack them by yourself, like the solitary armored poison-worm? Why do you need our aid?"

"My friend," said Mr. Whitlow solemnly, bending forward and fixing his gaze on the silvery-shelled elder, "I abhor war as the foulest evil, and active participation in it as the greatest crime. Nonetheless, I would sacrifice myself as you suggest, could I attain my ends that way. Unfortunately I cannot. It would not have the psychological effect I desire. Moreover"—he paused embarrassedly—"I might as well confess that I am not wholly master of my powers. I don't understand them. The workings of an inscrutable providence have put into my hands a device that is probably the handiwork of creatures vastly more intelligent than any in

this solar system, perhaps even this cosmos. It enables me to cross space and time. It protects me from danger. It provides me with warmth and illumination. It concentrates your Martian atmosphere in a sphere around me, so that I can breathe normally. But as for using it in any larger way—I'd be mortally afraid of its getting out of control. My one small experiment was disastrous. I wouldn't dare."

The Senior Coleopteroid shot a guarded aside to the Chief. "Shall I try to hypnotize his disordered mind and get this device from him?"

"Do so."

"Very well, though I'm afraid the device will protect his mind as well as his body. Still, it's worth the chance."

"Mr. Whitlow," thought the Chief abruptly, "it is time we got down to cases. Every word you say makes your proposal sound more irrational, and your own motives more unintelligible. If you expect us to take any serious interest, you must give us a clear answer to one question: Why do you want us to attack Earth?"

Whitlow twisted. "But that's the one question I don't want to answer."

"Well, put it this way then," continued the Chief patiently. "What personal advantage do you expect to gain from our attack?"

Whitlow drew himself up and tucked in his necktie. "None! None whatsoever! I seek nothing for myself!"

"Do you want to rule Earth?" the Chief persisted.

"No! No! I detest all tyranny."

"Revenge, then? Has Earth hurt you and are you trying to hurt it back?"

"Absolutely no! I would never stoop to such barbaric behavior. I hate no one. The desire to see anyone injured is furthest from my thoughts."

"Come, come, Mr. Whitlow! You've just begged us to attack Earth. How can you square that with your sentiments?"

Whitlow gnawed his lip baffledly.

The Chief slipped in a quick question to the Senior Coleopteroid. "What progress?"

"None whatsoever. His mind is extraordinarily difficult to grasp. And as I anticipated, there is a shield."

Whitlow rocked uneasily on his shoulder, his eyes fixed on the star-edged horizon.

"I'll tell you this much," he said. "It's solely because I love Earth and mankind so much that I want you to attack her."

"You choose a strange way of showing your affection," the Chief observed.

"Yes," continued Whitlow, warming a bit, his eyes still lost, "I want you to do it in order to end war."

"This gets more and more mysterious. Start war to stop it? That is a paradox which demands explanation. Take care, Mr. Whitlow, or I will fall into your error of looking on alien beings as evil and demented monsters."

Whitlow lowered his gaze until it was fixed on the Chief. He sighed

windily. "I guess I'd better tell you," he muttered. "You'd have probably found out in the end. Though it would have been simpler the other way—"

He pushed back the rebellious hair and massaged his forehead, a little wearily. When he spoke again it was in a less oratorical style.

"I am a pacifist. My life is dedicated to the task of preventing war. I love my fellow men. But they are steeped in error and sin. They are victims of their baser passions. Instead of marching on, hand in hand, trustingly, toward the glorious fulfillment of all their dreams, they insist on engaging in constant conflict, in vile war."

"Perhaps there is a reason for that," suggested the Chief mildly. "Some inequalities that require leveling or—"

"Please," said the pacifist reprovingly. "These wars have grown increasingly more violent and terrible. I, and others, have sought to reason with the majority, but in vain. They persist in their delusions. I have racked my brain to find a solution. I have considered every conceivable remedy. Since I came into the possession of . . . er . . . the device, I have sought throughout the cosmos and even in other time-streams, for the secret of preventing war. With no success. Such intelligent races as I encountered were either engaged in war, which ruled them out, or had never known war—these were very obliging but obviously could volunteer no helpful information—or else had outgrown war by the painful and horrible process of fighting until there was nothing more to fight about."

"As we have," the Chief thought, in an undertone.

The pacifist spread his hands, palms toward the stars. "So, once more, I was thrown on my own resources. I studied mankind from every angle. Gradually I became convinced that its worst trait—and the one most responsible for war—was its overgrown sense of self-importance. On my planet man is the lord of creation. All the other animals are merely one among many—no species is pre-eminent. The flesh-eaters have their flesh-eating rivals. Each browser or grazer competes with other types for the grass and herbage. Even the fish in the seas and the myriad parasites that swarm in bloodstreams are divided into species of roughly equal ability and competence. This makes for humility and a sense of perspective. No species is inclined to fight among itself when it realizes that by so doing it will merely clear the way for other species to take over. Man alone has no serious rivals. As a result, he has developed delusions of grandeur—and of persecution and hate. Lacking the restraint that rivalry would provide, he fouls his planetary nest with constant civil war.

"I mulled this idea for some time. I thought wistfully of how different mankind's development might have been had he been compelled to share his planet with some equally intelligent species, say a mechanically-minded sea dweller. I considered how, when great natural

catastrophes occur, such as fires and floods and earthquakes and plagues, men temporarily quit squabbling and work hand in hand—rich and poor, friend and enemy alike. Unfortunately such co-operation only lasts until man once more asserts his mastery over his environment. It does not provide a constant sobering threat. And then . . . I had an inspiration."

Mr. Whitlow's gaze swept the black-shelled forms—a jumble of satiny crescent highlights ringing the sphere of light enveloping him. Similarly his mind swept their cryptically armored thoughts.

"I remembered an incident from my childhood. A radio broadcast—we make use of high velocity vibrations to transmit sound—had given an impishly realistic fictional report of an invasion of Earth by beings from Mars, beings of that evil and destructive nature which, as you say, we tend to attribute to alien life. Many believed the report. There were brief scares and panics. It occurred to me how, at the first breath of an actual invasion of that sort, warring peoples would forget their differences and join staunchly together to meet the invader. They would realize that the things they were fighting about were really trifling matters, phantoms of moodiness and fear. Their sense of perspective would be restored. They would see that the all-important fact was that they were men alike, facing a common enemy, and they would rise magnificently to the challenge. Ah my friends, when that vision occurred to me, of warring mankind at one stroke united, and united forever, I stood trembling and speechless. I—"

Even on Mars, emotion choked him.

"Very interesting," thought the Senior Coleopteroid blandly, "But wouldn't the method you propose be a contradiction of that higher morality to which I can perceive you subscribe?"

The pacifist bowed his head. "My friend, you are quite right—in the large and ultimate sense. And let me assure you"—the fire crept back into his hoarse voice—"that when that day comes, when the question of interplanetary relations arises, I will be in the vanguard of the interspecieists, demanding full equality for coleopteroid and man alike. But"—his feverish eyes peered up again through the hair that had once more fallen across his forehead—"that is a matter for the future. The immediate question is: How to stop war on Earth. As I said before, your invasion need only be a token one, and of course the more bloodless, the better. It would only take one taste of an outside menace, one convincing proof that he has equals and even superiors in the cosmos, to restore man's normalcy of outlook, to weld him into a mutually-protective brotherhood, to establish peace forever!"

He threw his hands wide and his head back. His hair flipped into its proper place, but his tie popped out again.

"Mr. Whitlow," thought the

Chief, with a cold sardonic merriment, "if you have any notion that we are going to invade another planet for the sake of improving the psychology of its inhabitants, disabuse yourself of it at once. Earthlings mean nothing to us. Their rise is such a recent matter that we hardly had taken note of it until you called it to our attention. Let them go on warring, if they want to. Let them kill themselves off. It is no concern of ours."

Whitlow blinked. "Why—" he started angrily. Then he caught himself. "But I wasn't asking you to do it for humanitarian reasons. I pointed out that there would be loot—"

"I very much doubt if your Earthlings have anything that would tempt us."

Whitlow almost backed off his boulder. He started to splutter something, but again abruptly changed his tack. There was a flicker of shrewdness in his expression. "Is it possible you're holding back because you're afraid the Venusian molluscoids will attack you if you violate the perpetual truce by making a foray against another planet?"

"By no means," thought the Chief harshly, revealing for the first time a certain haughtiness and racial pride bred of dry eons of tradition. "As I told you before, the molluscoids are a distinctly inferior race. Mere waterlings. We have seen nothing of them for ages. For all we know they've died out. Certainly we wouldn't be bound by any outworn agreements with them, if there were a sound and profitable reason for breaking them. And we are in no sense—no sense whatever—afraid of them."

Whitlow's thoughts fumbled confusedly, his spatulate-fingered hands making unconsciously appropriate gestures. Driven back to his former argument, he faltered lamely. "But surely then there must be some loot that would make it worth your while to invade Earth. After all, Earth is a planet rich in oxygen and water and minerals and life forms, whereas Mars has to contend with a dearth of all these things."

"Precisely," thought the Chief. "And we have developed a style of life that fits in perfectly with that dearth. By harvesting the interplanetary dust in the neighborhood of Mars, and by a judicious use of transmutation and other techniques, we are assured of a sufficient supply of all necessary raw materials. Earth's bloated abundance would be an embarrassment to us, upsetting our system. An increased oxygen supply would force us to learn a new rhythm of breathing to avoid oxygen-drowning, besides making any invasion of Earth uncomfortable and dangerous. Similar hazards might attend an oversupply of other elements and compounds. And as for Earth's obnoxiously teeming life forms, none of them would be any use to us on Mars—except for the unlucky chance of one of them finding harborage in our bodies and starting an epidemic."

Whitlow winced. Whether he knew it or not, his planetary vanity had been touched. "But you're overlooking the most important things," he argued, "the products of man's industry and ingenuity. He has changed the face of his planet much more fully than you have yours. He has covered it with roads. He does not huddle savagely in the open as you do. He has built vast cities. He has constructed all manner of vehicles. Surely among such a wealth of things you would find many to covet."

"Most unlikely," retorted the Chief. "I cannot see envisaged in your mind any that would awaken even our passing interest. We are adapted to our environment. We have no need of garments and housing and all the other artificialities which your ill-adjusted Earthlings require. Our mastery of our planet is greater than yours, but we do not advertise it so obtrusively. From your picture I can see that your Earthlings are given to a worship of bigness and a crude type of exhibitionism."

"But then there are our machines," Whitlow insisted, seething inwardly, plucking at his collar. "Machines of tremendous complexity, for every purpose. Machines that would be as useful to another species as to us."

"Yes, I can imagine them," commented the Chief cuttingly. "Huge, clumsy, jumbles of wheels and levers, wires and grids. In any case, ours are better."

He shot a swift question to the Senior. "Is his anger making his mind any more vulnerable?"

"Not yet."

Whitlow made one last effort, with great difficulty holding his indignation in check. "Besides all that, there's our art. Cultural

treasures of incalculable value. The work of a species more richly creative than your own. Books, music, paintings, sculpture. Surely—"

"Mr. Whitlow, you are becoming ridiculous," said the Chief. "Art is meaningless apart from its cultural environment. What interest could we be expected to take in the fumbling self-expression of an immature species? Moreover, none of the art forms you mention would be adapted to our style of perception, save sculpture—and in that field our efforts are incomparably superior, since we have a direct consciousness of solidity. Your mind is only a shadow-mind, limited to flimsy two-dimensional patterns."

Whitlow drew himself up and folded his arms across his chest. "Very well!" he grated out. "I see I cannot persuade you. "But"—he shook his finger at the Chief—"let me tell you something! You're contemptuous of man. You call him crude and childish. You pour scorn on his industry, his science, his art. You refuse to help him in his need. You think you can afford to disregard him. All right. Go ahead. That's my advice to you. Go ahead—and see what happens!" A vindictive light grew in his eyes. "I know my fellow man. From years of study I know him. War has made him a tyrant and exploiter. He has enslaved the beasts of field and forest. He has enslaved his own kind, when he could, and when he couldn't he has bound them with the subtler chains of economic necessity and the awe of prestige. He's wrong-headed, brutal, a tool of his baser impulses—and also he's clever, doggedly persistent, driven by a boundless ambition! He already has atomic power and rocket transport. In a few decades he'll have spaceships and subatomic weapons. Go ahead and wait! Constant warfare will cause him to develop those weapons to undreamed of heights of efficient destructiveness. Wait for that too! Wait until he arrives on Mars in force. Wait until he makes your acquaintance and realizes what marvelous workers you'd be with your armored adaptability to all sorts of environments. Wait until he picks a quarrel with you and defeats you and enslaves you and ships you off, packed in evil-smelling hulls, to labor in Earth's mines and on her ocean bottoms, in her stratosphere and on the planetoids that man will be desirous of exploiting. Yes, go ahead and wait!"

Whitlow broke off, his chest heaving. For a moment he was conscious only of his vicious satisfaction at having told off these exasperating beetle-creatures. Then he looked around.

The coleopteroids had drawn in. The forms of the foremost were defined with a hatefully spiderish distinctness, almost invading his sphere of light. Similarly their thoughts had drawn in, to form a menacing wall blacker than the encircling Martian night. Gone were the supercilious amusement and dispassionate withdrawal that had so irked him. Incredulously he real-

ized that he had somehow broken through their armor and touched them on a vulnerable spot.

He caught one rapid thought, from the Senior to the Chief: "And if the rest of them are anything like this one, they'll behave just as he says. It is an added confirmation."

He looked slowly around, his hair-curtained forehead bent forward, searching for a clue to the coleopteroids' sudden change in attitude. His baffled gaze ended on the Chief.

"We've changed our minds, Mr. Whitlow," the Chief volunteered grimly. "I told you at the beginning that we never hesitate about undertaking projects when given a sound and sufficient reason. What your silly arguments about humanitarianism and loot failed to provide, your recent outburst has furnished us. It is as you say. The Earthlings will eventually attack us, and with some hope of success, if we wait. So, logically we must take preventive action, the sooner the better. We will reconnoiter Earth, and if conditions there are as you assert, we will invade her."

From the depths of a confused despondency Whitlow was in an instant catapulted to the heights of feverish joy. His fanatical face beamed. His lanky frame seemed to expand. His hair flipped back.

"Marvelous!" he chortled, and then rattled on excitedly, "Of course, I'll do everything I can to help. I'll provide transport—"

"That will not be necessary," the Chief interrupted flatly. "We have no more trust in your larger powers than you have yourself. We have our own spaceships, quite adequate to any undertaking. We do not make an ostentatious display of them, any more than we make a display of the other mechanical as-

pects of our culture. We do not use them, as your Earthlings would, to go purposely skittering about. Nevertheless, we have them, stored away in the event of need."

But not even this contemptuous rebuff could spoil Whitlow's exultation. His face was radiant. Half-formed tears made him blink his hectic eyes. His Adam's apple bobbed chokingly.

"Ah my friends . . . my good, good friends! If only I could express to you . . . what this moment means to me! If I could only tell you how happy I am when I envisage the greater moment that is coming! When men will look up from their trenches and foxholes, from their bombers and fighters, from their observation posts and headquarters, from their factories and homes, to see this new menace in the skies. When all their petty differences of opinion will drop away from them like a soiled and tattered garment. When they will cut the barbed-wire entanglements of an illusory hate, and join together, hand in hand, true brothers at last, to meet the common foe. When, in the accomplishment of a common task, they will at last achieve perfect and enduring peace!"

He paused for breath. His glazed eyes were lovingly fixed on the blue star of Earth, now just topping the horizon.

"Yes," faintly came the Chief's dry thought. "To one of your emotional temperament, it will probably be a very satisfying and touching scene—for a little while."

Whitlow glanced down blankly. It was as if the Chief's last thought had lightly scratched him—a feathery flick from a huge poisoned claw. He did not understand it, but he was conscious of upwelling fear.

"What—" he faltered. "What . . . do you mean?"

"I mean," thought the Chief, "that in our invasion of Earth it probably won't be necessary for us to use the divide-and-rule tactics that would normally be indicated in such a case—you know, joining with one faction on Earth to help defeat the other—warring beings never care who their allies are—and then fomenting further disunities, and so on. No, with our superiority in armament, we can probably do a straight cleanup job and avoid bothersome machinations. So you'll probably have that glimpse of Earthlings united that you set so much store by."

Whitlow stared at him from a face white with dawning horror. He licked his lips. "What did you mean by—'for a little while'?" he whispered huskily. "What did you mean by 'glimpse'?"

"Surely that should be obvious to you, Mr. Whitlow," replied the Chief with offensive good humor. "You don't for one minute suppose we'd make some footling little invasion and, after overawing the Earthlings, retire? That would be the one way to absolutely assure their eventual counterinvasion of Mars. Indeed, it would probably hasten it—and they'd come as already hostile destroyers intent on

wiping out a menace. No, Mr. Whitlow, when we invade Earth, it will be to protect ourselves from a potential future danger. Our purpose will be total and complete extermination, accomplished as swiftly and efficiently as possible. Our present military superiority makes our success certain."

Whitlow goggled at the Chief blankly, like a dirty and somewhat yellowed plaster statue of himself. He opened his mouth—and shut it without saying anything.

"You never believed, did you, Mr. Whitlow," continued the Chief kindly, "that we'd ever do anything for your sake? Or for anyone's—except us coleopteroids?"

Whitlow stared at the horrible, black, eight-legged eggs crowding ever closer—living embodiments of the poisonous blackness of their planet.

All he could think to mumble was: "But . . . but I thought you said . . . it was a misconception to think of alien beings as evil monsters intent only on ravaging . . . and destroying—"

"Perhaps I did, Mr. Whitlow. Perhaps I did," was the Chief's only reply.

In that instant Mr. Whitlow realized what an alien being really was.

As in a suffocating nightmare, he watched the coleopteroids edge closer. He heard the Chief's contemptuously unguarded aside to the Senior, "Haven't you got hold of his mind yet?" and the Senior's "No," and the Chief's swift order to the others.

Black eggs invaded his light-sphere, cruel armored claws opening to grab—those were Mr. Whitlow's last impressions of Mars.

Instants later—for the device provided him with instantaneous transportation across any spatial expanse—Mr. Whitlow found himself inside a bubble that miraculously maintained normal atmospheric pressure deep under the tideless Venusian seas. The reverse of a fish in a tank, he peered out at the gently waving luminescent vegetation and the huge mud-girt buildings it half masked. Gleaming ships and tentacled creatures darted about.

The Chief Molluscoid regarded the trespasser on his private gardens with a haughty disfavor that even surprise could not shake.

"What are you?" he thought coldly.

"I . . . I've come to inform you of a threatened breach in an age-long truce."

Five eyes on longish stalks regarded him with a coldness equal to that of the repeated thought: "But what are you?"

A sudden surge of woeful honesty compelled Mr. Whitlow to reply, "I suppose . . . I suppose you'd call me a warmonger."

THE END.

Nomad

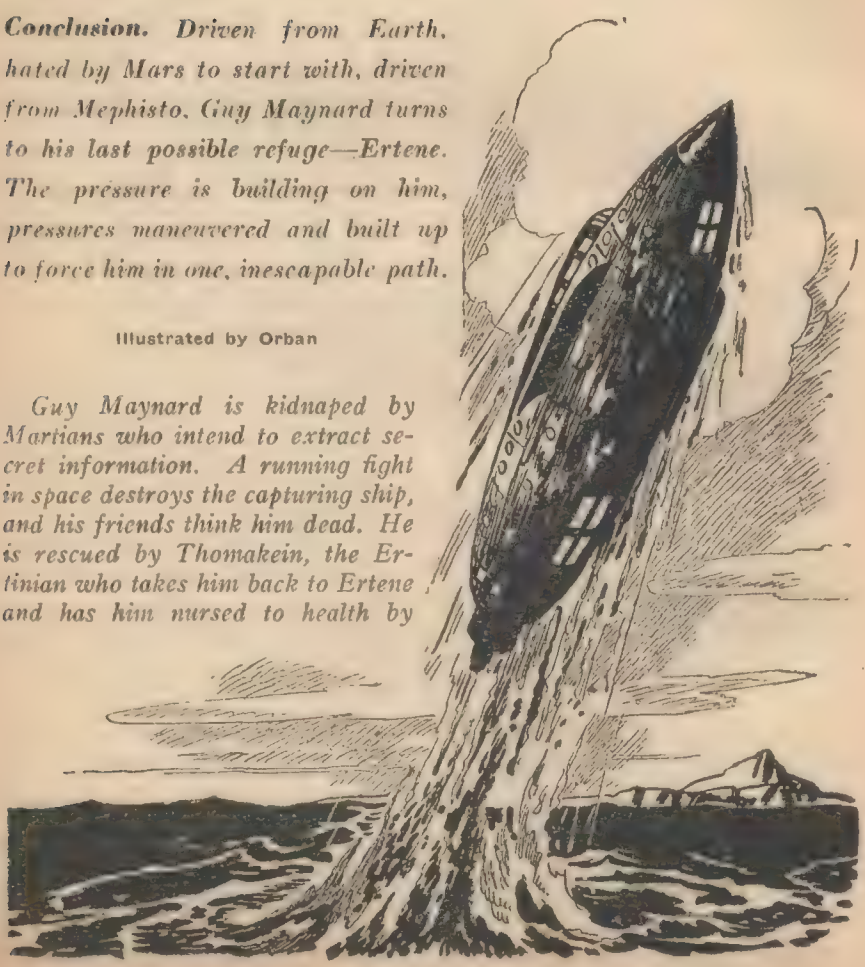
by WESLEY LONG

Part III

Conclusion. *Driven from Earth, hated by Mars to start with, driven from Mephisto, Guy Maynard turns to his last possible refuge—Ertene. The pressure is building on him, pressures maneuvered and built up to force him in one, inescapable path.*

Illustrated by Orban

Guy Maynard is kidnaped by Martians who intend to extract secret information. A running fight in space destroys the capturing ship, and his friends think him dead. He is rescued by Thomakein, the Ertinian who takes him back to Ertene and has him nursed to health by



Charalas, the foremost neuro-surgeon of Ertene.

Guy learns that Ertene is a wandering planet, and that he is to furnish them with information pertaining to Sol and the culture of the Solar planets. In return for this information, Guy is given many highly developed scientific items as well as a complete education in Ertinian lore.

Guy is unsuccessful in convincing the Ertinians that Sol is a desirable place for them to remain, and after extracting a solemn promise never to disclose their presence near Sol, Ertene prepares convincing evidence to clear Guy in his year of absence, and then sends him back with the admonition to use the Ertinian science for his own advancement.

Guy is accepted freely, and he begins to bring forth the science of Ertene as his own inventions.

Guy develops a small light-barrier using the same principle as Ertene's planet-sized light-shield, and engineers a method of utilizing the hidden spaceship in attack. He finds the super-ship Orionad *returning from a mission, and at the urging of his close friend, Thomas Kane, Guy makes a mock attack. He torpedoes the* Orionad *with a bucket of red paint and then goes into Sahara Base to see what happens when the* Orionad's *skipper discovers that he is technically blasted.*

The evidence of the superiority of the sub-ship far overrides the criticism of the prank, and Guy is highly commended for his invention. Malcolm Greggor, the chief of the Bureau of Exploration, is not vexed at Guy's action against the Orionad, *but Laura Greggor, whom Guy admires, resents the action and tells him off in no uncertain terms. This leaves Guy with no woman to fit his new insignia into his uniform as per the ancient ritual, and he turns to Joan Forbes, an old acquaintance who openly prefers Guy to any other.*

Years pass before Guy is raised to the rank necessary to be commanding officer of the Orionad, *and his "inventions" are all being used in many ways. Guy takes the* Orionad *to Pluto where the intrinsic light-filter is being set up, and uses the instrument to show that Sol has an undiscovered planet.*

Guy, as the discoverer, calls the planet Mephisto, and is given the job of commanding the invasion.

After establishing a base on the third moon of Mephisto, the battle settles down to a long, dragged-out fight. Joan Forbes shows up in nurse's rating and proves that she can be of value to the Patrol, though Guy tries to send her back to Terra. Guy, however, does not realize that he is the real reason for her decision to become a nurse, and Joan can not tell him. Guy, however, enjoys her presence even though he does not recognize the real affection.

The planet Mephisto is attacked next, and a huge battle ensues, during which a Mephistan robot is captured who is carrying a thought-transmitter. Realizing the danger of having such an instrument in the possession of Terra, Guy renews the battle. The thought-beam instrument would disclose his knowledge

of Ertene, which he has kept a good secret.

The Terrans redouble their attack, and find that the Mephistans have made a pact with Mars. With a traditional enemy to fight, the battle is joined in fury, and the battle resolves into a fight between Mars and Terra—struggling on Mephisto and far more deadly to the Mephistans than to either Mars or Terra.

The final battle takes place about a city, in the center of which is a mighty projector. Terra captures the city and the huge projector but not before it emits one toroidal vortex.

The toroid of energy speeds upward in spite of the combined efforts of the Terran fleet, and it hits the third moon of Mephisto, killing every living thing. Realizing too late that Joan Forbes was more than a mere friend, Guy vents his hate on Mephisto, utterly destroying all traces of Mephistan civilization.

Heartsick, Guy leaves Mephisto to return to Terra. In culminating his project of conquering the planet, he has lost Joan Forbes.

XII.

Guy Maynard inspected his image in the mirror and swore at it. He hated what he saw. His glance went from the mirror to the surroundings, and the face in the mirror, he felt, did not seem in keeping with the ornate suite of rooms at the Officers' Club. The rooms were rich, formal, and sedate. The face that looked back at Guy from the mirror was a composite between care and foolishness.

Lines had come between his eyes, and the frown of worry marked him, too. His face about the eyes and nose seemed old. An honest observer would have said that Guy's face had character there. But the lower piece of face was the idea of frivolity. That mustache! It was the sign of a youth trying to be grown up. It was an admission of immaturity that the face behind it was not enough front in itself; that foliage was needed to conceal the lineless face of youth.

It was there for beauty's sake! Beauty, he repeated in his mind. He snorted aloud. From now on they'd take him as he felt; as he was. In the face of his sorrow and self-hatred, Maynard was eschewing all signs of youth and self-indulgence.

He smiled slowly. They'd accept him, all right. They'd taken him wholeheartedly when he landed at Sahara after the completion of the Mephistan campaign. He'd had a three-day beard then and it hadn't mattered.

He entered the bathroom and when he emerged, his face was clean-shaven for the first time since he was twenty.

The bell rang, and from somewhere a junior aide came to open the door. Kane stepped in, and greeted Guy with surprise. "Well, young man, where's that face-fern of yours?"

"Shaved it off," grinned Maynard.

"You look better, I must say."

"I feel as though I've dropped a lot of foolishness since I did it,"

admitted Maynard.

"Why did you grow it in the first place?"

"Laura Greggor said she liked men with mustaches."

"And now you don't like Laura Greggor?"

"That isn't it. She'll take me for what I'm worth from now on."

"Them's harsh words, podner," drawled Kane. "What *is* your feeling for Laura?"

"I don't know," said Maynard honestly. "We've both been a little rough on one another, you know. She treated me slightly coldish the last time I saw her—though she was indeed warmer than the incident after the *Orionad* got painted. Then, too, the last time I saw her was the day before I headed for Pluto with the *Orionad*. Because she has been so snippy once before, I gave nebulae to Joan Forbes to pin on, remember?"

"That was a cold thing to do," said Kane.

"Laura told me not to annoy her until I could give her the insignia of a patrol marshal—when I became sector marshal. So when I was raised last time, I did as she demanded."

"Sometimes women don't expect to have their snapped words taken to the letter."

"Are you carrying her banner?" asked Guy.

"Not exactly. I'm trying to be honest. And I think that Laura Greggor would make a good wife, for you."

"Why?"

"Laura has background, money, friends. She has social standing. Also, I have a feeling that she has been sort of waiting for you. After all, she is a very desirable woman, and I doubt that she has been friendless all these years."

"She's twenty-six," said Guy absently. "Maybe you're right. It'll depend upon how she greets me."

"Any woman in her right mind would greet you affectionately," smiled Kane. "You're the Man of the Hour for fair. The Man Who. You're famous, Guy. Wealth is yours for the taking. Fame is yours already. They're talking about hitting Mars, and they're naming you as supreme commander. How do you like that?"

Guy shook his head. "I've had enough killing for one lifetime."

"You'll change that opinion," said Kane. "What you need is rest and relaxation."

"I'd like to get away from the whole business," said Maynard. "I'm beginning to hate the whole shebang."

"You'll forget that. Did you know that they're going to present you with your starred nebulae tonight?"

"Are they?"

"Yes. Laura Greggor will be there, too. Are you going to offer her the chance?"

"Might as well," said Guy.

Kane looked at the younger man sharply. "You lost more than friendship out there on Mephisto," said Kane. "You lost more than your fellow men."

"You mean Joan Forbes?"

"Yes."

Guy nodded slowly. "I curse myself that I didn't realize her affection sooner. I'd have had her now if I'd not been so accursedly blind."

"No, you're wrong," said Kane. "Forbes would have followed you out there anyway. Nothing would have changed, excepting that Joan could have eased your worry some. Call her Joan Forbes or Mrs. Guy Maynard, and you would have found her out there on Mephisto III."

"I called her Forbes and ignored her affection," said Maynard with a groan.

"It's done now," said Kane. "In all of our lives, there are mistakes which cause us regret for the rest of our lives. Not one of us is immune. But, Guy, the successful ones of us forget our regrets and look forward instead of backward. Living in the past is death in the future."

"It's hard to forget," said Guy.

"And yet," said Kane, "out there you will find an entire planet ready to give you their acclaim. They'll make you forget. Unless, of course, you prefer to remember, in which case you'll retreat within yourself and become an embittered man. But if you'll go out there among the people who want you to be the hero they think you are, you'll find yourself being so busy living up to their belief that there'll be no time for regret.

"But above all, Guy, don't take the other road. You can go anywhere from here, now. If you become embittered because of your regret, you'll end up a wizened old man with nothing but sorrow to recall for all your lifetime. Life is too short and too interesting to spend it in the past. Guy, what would Forbes tell you to do?"

Guy turned. "She'd probably laugh and tell me not to be a fool. She'd probably admit in that laughing way of hers that she was the best—but second best becomes top when the best is gone."

"You're bitter," said Kane. "The remedy is people, noise, music, excitement, and forgetfulness. Come on, Guy, we'll go out now and find it!"

"I don't think I care to."

"Don't be an idiot. Must I tell the world that their hero does not come to his own functions because of grief? And Guy, why do you now fall grief-stricken? I know and you know. But frankly it was because you didn't know until too late. Now snap out of it and come with me."

Maynard viewed the banquet with distaste. Yet it was exactly like one of those same functions that he would have given his life to attend five years ago. He thought of that and tried to forget. The reception room was filled with glitter, and the sound of talk and light laughter assailed his ears, and in part, Maynard forgot his feelings. He became eager for the laughter. Kane noticed the change, however slight its appearance, and he smiled inwardly.

"Good boy, Guy," he said. He led Guy to the center of the larger

group and without a word shouldered into the circle.

It was enough. They knew Kane and accepted him easily. Then they saw Guy, and accepted him immediately; while they did not know him, they recognized him. Guy became the center of a smaller circle and one of the men growled cheerfully in Kane's ear:

"I don't know whether I like you any more or not. That young cub has collected all our women."

Kane laughed. "Call him a young cub to his face, Tony, and he'll collect your scalp."

"I know it. He's quite a fellow, I hear."

"He's the finest. Get Bill over there and we'll find a drink. And don't worry, your women will be here when you find time to take 'em home."

"I know that, too. And for nine weeks afterward they'll be yelling at me to show some get. Darn him, he even looks like a swashbuckler."

"I doubt that any piratical thoughts run through Maynard's mind," said Kane, motioning to the man called Bill. "And as far as women go, he's been a very busy boy for a long time."

"That's the trouble right now. If I'd been isolated as long as he has, I'd be howling at the moon. And look at 'em flock around! A mutual admiration society if I ever saw one."

Bill came up smiling. "It looks as though your protégé is doing well in all fields of endeavor, Kane. Right now he's fighting the battle of Amazonia."

Tony growled again. "Don't you call my wife an Amazon!"

Bill laughed. "I meant mine. Come on, let's haunt the bar where we can excel in our own fields."

The lightness of the talk was doing Maynard a world of good. There was nothing said at all; nothing of the slightest importance. It was all done by inference and by double-talk, and each of the women seemed to be doing her best to entice him. In the back of Maynard's mind something kept telling him that it was all sort of silly; that he had nothing in common with these frivolous women, but the fore portion of his mind enjoyed it.

And the stiffness went out of him, and absently he began to look over their heads for Laura Greggor. When he saw her arrive, he wondered how he should greet her, but she took the problem in her own way and came over to the group.

"Hello, Guy," she said, offering him her hand.

"I'm glad to see you," he told her.

"One of the other women smiled wryly. "An eligible, girls. That's about all, now."

"We've experience," returned another. "And what has she got that we haven't?"

"His hand," said the first. "And from here, it looks as though she intends to keep it."

The orchestra broke into dance music, and as though pre-arranged. Guy led Laura through the crowd to the dance floor.

"How've you been?" he asked quietly.

She looked up at him and smiled. "Fine," she said. "I'm glad you're here."

"So am I—now. An hour ago I didn't think I would."

"So?"

"I was feeling low. Reaction, I guess."

"What you need is relaxation," she told him. "A drink, perhaps?"

"Could be," he agreed.

"If I were you, I'd get good and fried. You must have been through everything."

"It seems like everything," he smiled. "But I can't get stinkeroo. I'm supposed to be the guest of honor."

Laura laughed lightly, and led him to the bar where she prescribed a healthy drink. Guy downed it, gulped, and wiped tears from his eyes. "Whoooooo!" he squealed hugging his midsection.

"Sissy," giggled Laura

"Feels like a MacMillian going off down there. Is there a fire extinguisher in the place?"

They both laughed. Then Laura led the way to the opened French doors and out into the fragrant garden. It was warm and pleasant there, and with one thought they went to the far, darker end of the garden and sat down.

"Did you think of me?" asked Laura.

"Always," lied Maynard. Then he said truthfully: "I've been working toward this moment for a long time. You wanted a set of patrol marshal's nebulae. You may have mine, now."

Laura took the box, and looked at the starred nebulae of the sector marshal.

"I shouldn't do this," she teased.

It rubbed Maynard the wrong way, that teasing. He knew it was just coquetry, but still it went against the grain. It was probably because he knew what was in her mind.

"Why not?" he asked. "In some circles it is considered an honor."

"Huh," gibed Laura, "perhaps in some circles. But remember it is no great novelty to the daughter of a space marshal."

"The thrill of giving some bird the royal send-off is gone, hey?" asked Guy, stubbornly. "How many other officers have you done the honor for?"

"Quite a number," she told him. "Quite a few more than any one man can boast of having women do it for him. After all, one man only gets eight new insignia during the course of his life."

"You must have quite a collection," said Guy. "Which collection includes some of mine."

"Some," answered Laura sharply. "Most of my officers are true, though, and do not go off letting other girls pin their insignia on."

Guy shrugged. This was not going according to plan at all. But best have it out. If he could get the upper hand in this argument with Laura, he'd feel better. Always before he had come off second best in disagreements with Laura Greggor. But he felt that he was dead right in this affair, and he was not going to back down now that

she had flung his actions into his teeth.

"Well," he said with an expansive wave of the hand, "you told me not to annoy you with petty trifles, and that you'd be glad to accept the patrol marshal's nebula when I became sector marshal. I merely followed your wishes. To the letter, in fact."

"You didn't have to make a public show of yourself with that little waitress!"

"You mean Senior Aide Forbes?" asked Maynard, feeling the back of his neck bristle. If he'd been possessed of any kind of mane, it would have stood up in anger.

"Senior aide? How did she get that rank?" scorned Laura.

"She worked for it. And hard."

"Slinging hash?"

"No, you little twirp. She went to a school for Patrol Nurse Corps and paid for her tuition by working nights."

"She could have made a better night-living than working in a beanery," snapped Laura.

Slap!

Maynard had been raised as a normal youngster. His mother had done her best to instill the instincts of a gentleman in her son Guy, and at an early age he discovered that little girls are not to be beaten over the skull with a toy truck, and that beebee guns make little round bruises when they hit little girls' legs, and that produced bad evidence. Little girls, he learned, had no such restriction upon their action, but could let him have a few quick blows without suffering the consequences. On the other hand, he soon discovered that at best their blows didn't count for much, and so he learned that hitting women was taking an unfair advantage.

But hitting with the tongue had never been explained to Maynard's satisfaction. Laura Greggor was being just too open with her scorn. And so Maynard, who never had hit a lady before, slapped Laura Greggor across the face.

"You hit me," she said in absolute surprise and equally absolute anger.

"You talk too rotten about someone far above you," snapped Maynard.

"Don't you call me rotten," snarled Laura. "Go on back to that little trollop you prefer."

"Can't," said Guy shortly. "She died up there!"

It made no impression on Laura. "And so now you come running back to me? Sorry, Guy. I don't play second fiddle—even to a corpse!"

"You don't have to," he said evenly. He took the box from her hand. Then as she watched in amazement, Guy removed his own insignia and placed the starred nebulae on his own lapel. With that finished, he arose from the bench; flung the plain nebulae into the little lagoon, and left Laura sitting there.

Guy entered the room through the same door, and went immediately into the bar where he downed four drinks in rapid succession.

He felt as though he needed that

alcoholic sterilization of his mouth. Maynard's stomach was unused to liquor in such undilution. It reacted; got rid of the alcohol as soon as it could by filtering it into the blood stream. In other words, Guy became slightly drunk on a total of five drinks. Unevenly, Guy went to the main room, where he was immediately taken in tow by two women.

"Now," said the one on his right, "we have you to ourselves. Tell us about Mephisto."

"How did you find it?"

I found it cold and forbidding.

"To think that it was undiscovered for all of these years!"

Too bad I did find it.

"You found it, and you conquered it. That makes it almost your own planet, Guy."

I'll trade it for a chance to seek it again.

They prattled on, not noticing his silence. They wouldn't have heard him if he had spoken, for they poured the questions at him without waiting for an answer.

"Was it exciting to go all the way out there?"

It was deadly. They hit us with all they had.

"Tell us about the battle. We want to hear the final words on the finish of the fight. Tell us how you captured the weapon that destroyed all Mephisto. Was that thrilling?"

Thrilling? Maynard saw a white face with closed eyes, neatly placed in endless rows of other faces. He heard the voice of the chaplain saying again: "—vast though the universe be, and though you travel it endlessly, there you will find His work—"

How could death be thrilling?

"You make me sick," said Maynard uncertainly.

"He's drunk."

"Yes, I'm drunk," he roared. "And you'd be dead or worse than drunk if you'd seen what I had to live with. What do you know of death and of war? *Thrilling? Exciting? Wonderful?* Bah. It was rotten, as sordid, and as ungodly as running opium! Sending men to their death. Fighting a war against an enemy that knows it is fighting for its right to live.

"Fighting for what? So that you and your kind can sit here and praise the unlucky man who is destined to return for these medals.

"Fighting to make the Solar System bend to Terra's will, that's what it is. What did we want of Mephisto? Nothing except tribute. I'm sick and tired of people telling me that I did a wonderful job. A brilliant job of butchering, that's what they mean!"

"Guy, take it easy. They mean no harm," interposed Kane.

"If they want to see how thrilling war is," blazed Guy, "let 'em go out and see!"

"Take it easy!"

"Let 'em help cut the leg from a corpse so that it can be grafted onto a lad with his leg shot off!" stormed Guy. "Let 'em watch a ship fall ten thousand miles into a planet, and watch it blaze as it hits the air."

"It's all over," Kane told him. He turned to the rapidly collecting

group and said: "Permit me to apologize. Guy has been through hell, and shock still claims him."

"It's over?" asked Guy. "It'll never be over. It'll go on and on and on until the last Terran is dead and forgotten."

"Well," said Kane, "you'd better make the best of it, Guy. You're Terran, and there's no place else to go."

"I'd like to find a planet that hasn't seen war for a thousand years," said Guy uncertainly. The alcohol-concentration was reaching new levels in Guy's system, and his brain was feeling more and more the effects.

"We'd all like that," said Kane. "Now break it up, Guy, and simmer down."

The storm passed, then, and Kane walked Guy into the dining room and seated him at the speakers' table.

The room hazed before Guy's eyes as he sat down. The echo of his voice resounded in his brain: "A thousand years—"

What was it that Charalas said? A thousand years—no, it was more than that. Thousands of years since they had war. That was a planet! Ertene. The nomad world that wanted no part of Sol's warfare and strife; killing and death. They knew—they knew from the things he said—that Terra was a planet of self-aggrandizement and that Terrans were proud, haughty, and belligerent.

Maynard laughed wildly.

His hand felt the clean-shaven face.

He'd go there!

"No strife for thousands of years," he said aloud.

Space Marshal Mantley, at his side, turned in puzzlement and asked: "What was that?"

Maynard saw the other as a sheer maze of white; no features were visible to his befuddled mind.

"They haven't had war for thousands of years," he said.

"Who? What kind of dead, sterile place is that?"

"Ertene—and never call Ertene dead!" exploded Guy.

"What's Ertene?"

"Ertene—the nomad planet. The wanderers."

"I do not follow?"

"They came and saw us. They decided not to have any."

Mantley turned to Kane and said: "What is this young man talking about?"

"I should know?" asked Kane with a shrug. "He's drunk—and though it is deplorable that he should pick this time to get that way, I, for one, don't blame him."

"Well, after the circumstances, neither do I," agreed Mantley with a sympathetic smile. "Those female predators would drive any man to murder with their thoughtless questions. But look, Kane, this tale of a nomad planet that preferred peace to association with Terra sounds too complicated to be the figment of a drunken imagination."

"How could it be anything but?"

"Not a drunken figment," blurted

Guy. "I was there, I should know."

"It must be a wonderful place," said Mantley soothingly.

"It is a paradise," insisted Guy.

"And you were there?"

"How would I know about it otherwise?"

"All right," laughed Kane. "Prove it!"

"How can I? They destroyed every shred of evidence."

"Who did?"

"You did—you and your kind. Didn't want Mars to know about *Mardinex*—shot up the lifeship. Made me mem'rise forged log—forged by Ertinians to fool you—and then burned log. Ha!" and Guy went into a paroxysm of laughter. "You forged a log from a forged log."

"When was this visit?"

"When—right after capture by Martians. Came home to Terra."

"Kane," said Mantley, "there may be nothing to this wild yarn. But to stop any wild talk on the part of observers here, I'm going to investigate thoroughly."

"Please do. I'm certain that it will kill any rumors. Guy went through part of the Martian idea of torture, I think, and it may have deranged his mind somewhat."

"I'll look into it," said Mantley.

"We can permit no ugly rumor to mar the record of Guy Maynard," insisted Kane. "He is too high a figure now to permit rumors—and there are those who would spread such rumors."

Mantley nodded. "Some of them are here, and they have heard."

"You don't mind a bit of scorn?"

"Of what kind?"

"My publications will break this, of course. We'll do it in the light of an investigation made over the statements made in jest by Sector Marshal Maynard. You may find yourself an object of some scorn since you are willing to accept the prattlings of a slightly-drunken man, suffering from battle-shock, as basis for a formal investigation."

"If you'll paint me as an unwilling investigator, I'll take it."

"Well," smiled Kane, "you are unwilling, I know. You'll be portrayed as a friend of Maynard's who is forced to investigate and is doing so only because your duty to the Patrol insists that you do. Correct?"

"Yes. But let's get it over with. I wouldn't want this dragged out too far."

XIV.

Guy Maynard faced the President of the Court, who said to him: "Maynard, your story is absurd. That you spent a year on an unknown planet sounds impossible. But—there is one bit of evidence which, if you can explain, will be discarded. Early medical records claim that you have a MacMillan burn beneath your right arm. It is further stated that if this scar is not removed, it will turn into cancer. No record can be found of its removal—yet it is gone. To clear yourself, name the surgeon that removed the dangerous scar."

Maynard blinked. He'd forgotten the scar entirely. It had been a minute speck that had never given him a bit of trouble.

"The record states that you got that scar at age twenty-two. You were a junior aide at the time, and you received the burn in a fight with the Martians during the Martio-Terran Incident."

He'd gotten it before he went to Ertene!

"Can you recall the name of the doctor?"

Guy shook his head.

"I can not believe that you would visit a disreputable doctor for such treatment when the Base doctor is available—and the expense is no answer. Having received the wound in service, its treatment is a responsibility of the government. Yet we have searched the records of all reputable doctors and find no mention."

Guy shook his head again.

"Maynard, I am beginning to assume that there is truth in your drunken story. Your developments—your inventions—were so startling and so brilliant. Memorized details of a civilization's best efforts. The barrier-screen. Used, no doubt, to keep Ertene hidden as it passes from start to finish through the universe. A brilliant bit of adaptation, Maynard."

"That's a little harsh, Mantley," said Kane.

"Are you in this with him?" asked Mantley sharply. "If I were you, Kane, I'd look to my own past and see if there are any loose ends. We may decide that you know about this, too."

"You're being overharsh to a man

that should have the entire world at his feet."

"Maynard, will you swear upon your honor that no such planet exists?" demanded Mantley.

Maynard remained silent, convicting himself.

"Ha! Then it was not drunkenness entirely. Look, Maynard. Your high position as sector marshal will not help you in the face of this. The entire situation will be overlooked if you do your duty and lead us to Ertene now."

Maynard made a soundless "No".

"You are a valuable man," insisted Mantley. "Copies though the originals may have been, your work at adaptation is nothing short of genius. To take an alien concept and reduce it to practice is no small feat, Guy. Do not fling your future into the drink. Lead us to Ertene, and we will consider your job well done."

"They saved my life," said Guy. "They gave me knowledge. I strived and worked enthusiastically in an effort to convince Ertene that Terra and Sol would ever be friendly, and offered her a place near Sol. I assured Ertene of our undying alliance and protection. They preferred eternal loneliness to joining a militant system such as ours. Since they felt that entering Sol's system would bring about the death of Ertinian integrity, they offered me life in exchange for silence."

"A fine bargain," sneered Mantley.

"I swore to keep their secret. I shall."

"Your honor is rooted in dishonor—"

"That I deny. I had no other alternative. I could bring their secrets to you only by swearing silence. If I had not sworn silence, I would have been executed. Alive, but silent, I brought to Terra the science by which she will gain mastery over the Solar System. Dead, I would have been able to do nothing, and Terra would not have the benefit of the things I brought. Give me that credit, at least!"

"You should have sworn silence," said Mantley coldly. "And then taken us to them."

"You would prefer an officer whose word means nothing?"

"False oaths. The only oath that is worth the breath of life is your oath to the Patrol."

"I see. Dishonesty extends in only one direction? Be rotten to the core—for the Terran Space Patrol! Even a Martian spy has more honor than that!"

"Enough. We find you guilty of treasonable acts, Maynard. You will be removed from command, relieved of any connection with the Terran Space Patrol, and your citizenship in the Terran and Colonial Alliance destroyed. We'll see how popular you are, Maynard. No matter how big a man may get, he still is less than the world itself. We'll find out whether you can find friends who trust you when you've been dishonorably discharged from the Patrol.

"There is this fact. To remove the Act of Treason from your record, you must remove the charge.

By leading us to Ertene you will remove any cause for action, and by doing so you will regain your position. Understand?"

Maynard's lips curled in a sneer. He said nothing because there was nothing to say. The President of the Court approached him and harshly ripped the insignia from his uniform.

"Thus I remove the sacred shields of honor from a man of dishonor. He has defiled them."

The insignia were dropped into a small box, which was then burned so that no trace of the original shapes remained. During the firing of the insignia, Guy stood woodenly. His former friends looked past him, through him, ignoring him. They arose and filed out of the room, leaving Guy standing alone.

Completely alone.

He stood on the edge of the great spaceport and watched the activity. It was hard to realize that he was no longer a part of it; he knew that he could return as soon as he grew tired of going hungry, of finding no work, of being without a single friend. But before he did that—well, he was not reduced to starvation yet. Perhaps something would turn up.

He heard a footstep beside him, and found it was Kane.

"Sorry," he said to the publisher.

"So am I, Guy. But I believe with you. You should have been permitted your little secret. Would they have preferred another Mephisto? A planet such as you describe ruined and sterilized because of pride? No—and believing that I know the mettle of the people on that mysterious planet, I know that they'd die before they'd permit invasion. Right?"

"Absolutely. That's why I did nothing. They were human, Kane, as you and I are human. A dead specimen is no good in a zoo."

"I know. What are you going to do?"

"I don't know."

"Don't take it too hard. I'm still the big publisher. I'll see that your case reaches the public in the proper light. You'll be a victim of Patrol politics, thrown out because of personal pettiness over practical action."

"That may help."

"They'll never stand for it."

"You should know."

"I do. Now look, Guy. Will you take the *Loki* and head for Pluto? Get lost there on Pluto; hire out as a workman. When the time is ripe, you'll know and can come back. I'm not going to see my friend broken because of their high-handed methods."

"That's offering a lot."

"Not at all. I can pick the *Loki* up there. Right at the present time you'd get nowhere if you stay on Terra; your face is known to every man, woman, and child on the planet."

"But—"

"Go to Pluto, Guy. Out there they will not demand ten years of references before you apply for a job."

Guy faced Kane once more. "Was I right?" he asked.

"As far as I am concerned, you were. And as far as I have the ability to make people believe—and I've made quite a pile doing just that—they'll believe, too. We'll campaign you right back into the service. But meantime you must play this my way. Disappear, Guy, because when you return, we can claim another M-12 for you, and tell the world that your dismissal was all a part of a grand plot. Understand?"

Guy nodded. Kane's argument was very sound. Remaining in the light would destroy any chances of squashing the charge later.

"I'll do it!"

Kane handed Maynard the key to the *Loki's* shelter. "Keep an eye on the newsprint," he said. "You'll know when to return!"

High in the Solar System; up near the orbit of Jupiter, Guy became lonely. Killing time, he'd started at a I-G drive, and in spite of the terrific velocities that can be achieved at a single G, it took a long time to make the run to Pluto at I-G. He'd watched and listened daily to the Press Broadcasts and gratified to know that Kane's campaign was off to a successful start.

Other headline stories bothered him. The Patrol had started a search for the hidden planet. It worried Guy. Supposing that they did manage to find it? The recurring worry caused cold sweat and shakes, and it was only by main force that Guy willed himself into a semblance of nervous stability.

Again and again he analyzed his actions. He viewed them as Guy Maynard. He tried to see them from the standpoint of the Patrol. He tried to visualize the thoughts of the people, and knew that they were being swayed by both Kane's publicity and the Patrol's adverse reports. Would they ever know the real truth? How could they ever really realize the facts when the facts were cloaked in suave words and shaded tones?

The Mephistan was right. True democracy would occur only when the thought-beam instruments became universal and fancy words no longer prevailed. But all evidence of the mental instruments was destroyed on Mephisto; Guy had seen to that. He'd been afraid that their use would disclose his secret.

It would have uncovered his secret, without a doubt.

And yet he was responsible for destroying an instrument that would have been the salvation of mankind. Wars and strife and graft and lies were the rewards of power; and power went to the man who was wealthy and dishonest enough to buy it. An honest man did not have a real chance to gain power; others bought it easily, and by trying their tactics and buying their power, they themselves became dishonest.

He felt like cursing Ertene, and then remembered that without the nomad world, he would have been dead.

And yet, what had he gained from life?

It was a hard thing to balance and justify. He'd had his day of success and power. Regardless of

what they said about him, he had made his good mark on history. He realized the life was a continuous succession of rises and falls, and by all the rules he had been heading for the fall. But to have fallen so far—was that really fair?

How should he have treated Laura Greggor? And what of Joan? Could he have changed that, really?

Mephisto? Well, he'd found the tenth planet for them because he wanted power himself. He'd fought the tenth planet, and had given Terra another planet to colonize, and in carrying on the long incident of the tenth planet, had succeeded in losing something that could not be calculated in the mean terms of money.

He wondered whether he was any better than the rest. Had he been satisfied to remain as he was, Mephisto would have been discovered by someone else, and that would have lessened his chances of getting involved in this present situation. But no. He had to strike high and hard, so that he could fling the insignia of the Patrol Marshal in Laura Greggor's face with an "I told you so!"

Laura Greggor didn't deserve it.

And then what had he done? He'd pinned them on himself.

Guy smiled glumly. "Superstition," he snorted. And yet it had happened. The first time he'd pinned his own lapel ornaments on, trouble had claimed him for its own. "Superstition!" he growled. Perhaps superstition was just the human-equation coming to the fore. Those unexplainable factors of human behavior. In walking under a ladder, one might get hit by falling tools; in breaking a mirror one might cut himself; one was fortunate to find a four-leaved clover because they were rare, one so fortunate might repeat. In having disaster fall upon an officer that had no friend to pin his insignia on—it meant that he had no true friends. At least, no friends among the opposite sex.

And Maynard knew that a man of that character, whose friends did not include one member of the opposite sex, was possessed of a warp in his get-together and quite capable of speeding blindly into some form of disaster. A man should be balanced in all things—even to the sex of his friends.

Guy felt a tiny pang of jealousy. Who, he wondered, had been the lucky man to pin the caduceus on Joan's uniform?

Guy turned to the news-recorder and read the pages with aloof interest. A great verbal fight was beginning between Kane's outfit and another. Guy shook his head. It was all wrong. Kane shouldn't be fighting the Patrol. They'd break him—and then what good could he do. For even a publication company such as Kane's to attempt to sway the people against the wishes of the Patrol was foolish. And Kane's interests covered everything possible in the realm of the Fourth Estate. Books, broadcast, newsprint, commercial advertising, everything.

A trace of humor passed through Guy. It was a trace of that same humor that had been essential in saving every human being since the beginning of time.

Guy listened to the glowing claims of an advertiser on the newscast and laughed to think what the thought-beam would do to his script — "—and these cigarettes, ladies and gentlemen, are made of no worse a grade of floor-sweepings than any other brand!"

He laughed, and it did him good.

But this rise in feeling was short-lived. The next newscast took him right down to the bottom again.

It was a long editorial, written by one of the High Command, denouncing Kane and his publications, and officially suspending all operations of the Kane Publishing Co. for publicly and aggressively resisting the Patrol's attempt to add still an eleventh planet to the Solar System.

It made no matter that Ertene was passing through. They did not know that Ertene was dirigible and could be swung into an orbit. In fact they thought not. But they were determined to visit Ertene. And Guy Maynard knew that their intent was to ravage the nomad of her treasures and every bit of her science.

So Kane was no longer a factor. He had fallen in the battle to save a friend—himself, Guy Maynard.

Guy felt that he was an unfortunate fellow. Everything that he loved and wanted to befriend was going to hell—or had gone there already. Even Ertene—

No! Perhaps he could still do something about that!

Not openly. But he could pass as Ertinian, he knew, provided that he shaved twice daily and managed to hide his razor well.

It would take years of careful planning and working to get himself to a dominant position on Ertene—one that would be without question. He'd done it on Terra—using Ertinian science, and no doubt he could do the same thing on Ertene using Terran science.

He had time. Ertene was still far, far out beyond the orbit of Mephisto and the speed gave him years to prepare, unless an unhappy accident cut his time. He made an oath, then. There were two things to take with him. The vortex projector and the thought-beam. One, Terra had. The other, neither knew existed. A threat on the part of Ertene to blast Sol itself with vortices might hold Terra away, and the thought-beam would solidify Ertene against invaders.

If his action in coming to Ertene to protect them were really known, he didn't think they'd act harshly in his direction. Ertene was one place where the thought-beam would save him at the proper time.

Maynard strode to the tiny pilot's chamber and charted the course of the *Loki*.

When he established the barrier, he did not know that a hundred beam-detectors throughout the system went wandering foolishly; their center-of-urge gone completely. But he suspected, and he searched the

Loki with a sensitive detector rigged out of the communications set parts and located twelve separate spotter-generators.

If he were to land on Ertene safely, he'd want no detectors on him. And if the barrier failed for the barest instant on his course, Terra would be on the trail in minutes.

Once inside the great barrier that covered Ertene, he would be safe—except that he wanted no Ertinian to detect him either.

So he combed the *Loki* free of all emission and then continued to coast toward Pluto, concealed behind the barrier.

Ertene was on the far side of Sol.

Evasion of the Patrol was going to be a problem. Though he was not undetectable, they knew where he was and how fast he was going and in what direction. Their course-predictors could extrapolate very well indeed, and could predict the position of a barrier-hidden ship since no drive would work behind the barrier. It was a matter of straight-line projection unless the celestial masses caused some deflection, but this could also be calculated.

Since his creation of the barrier would be taken as an admission of flight, he was willing to wager his life that a Terran ship would soon take the pursuit. Armed with the course-prediction, the ship would match the *Loki's* velocity and position to a precision within a few days.

He could not hope to drive the *Loki* under the barrier. Yet he was beyond the negative-detector range that he had devised on the *Orionad* to predict the positions of sub-ships. His problem, then, was to stay outside of that range, and at the same time change his course.

Once the barrier was removed, he would be detected by his drive. He shook his head. Well, there were certain ideas he could give a try. And, luckily, there was no premium put on time.

He would make use of the minor errors in all detectors. He could make use of the "angles of confusion" which give areas instead of pinpricks at great distances for the position of a target. And he could hope to win through.

Kane's little ship was not a Patrol ship, unluckily, though the publisher had installed just about every attachment that he could get his hands on. Guy's assumption that he would find acceleration garb in the locker was correct, and he strapped the binding, holding suit on tightly and waited while the oxygen-content of the *Loki* increased.

Then Guy cut the barrier and pointed the top of the *Loki* north; at ninety degrees from his line of flight and drove it for thirty minutes at a bone-tingling 10-Gs. Then he set the barrier again and coasted.

He'd been loafing along the road to Pluto at 1-G. He was about halfway there, and it had taken him slightly less than ten days, twenty-four hours each, to achieve his present initial velocity, Plutowards, of just a trace over five thousand miles per second. His action at driving the ship northward had changed his course only slightly. It had given him one hundred and ten miles

per second velocity northward. His course, then, differed from the original course by the angle whose tangent is equal to one hundred ten divided by five thousand, or roughly one over fifty.

In decimals, this becomes point zero two. It is one degree, eight minutes, and forty-four plus seconds.

Not much, but enough to throw Guy quite a bit out of place by the time he continued to coast toward Pluto. Minute angles add up when they are projected for half the distance from Sol to Pluto, a matter of one billion, eight hundred fifty million miles. That plus the fact that he should start decelerating at 1-G to make Pluto and his calculated course constants come out even.

Then there came a long period of nothing to do.

But Guy found things to do. He went to work on the detector. He increased its gain, and in doing so sacrificed much of its selectivity and directivity. Targets at one million miles, formerly at extreme range, would no longer be pinpoints in the celestial sphere, but shapeless masses but one third the distance out from the center of the detector sphere. The angles of confusion would be greater, too, and the noise level went up to almost prohibitive quantities. Flecks of noise-projected light filled the globe with a constantly swirling, continually changing pattern that reminded Guy of the Brownian Movement viewed in three dimensions.

Calibration of the souped-up detector range was based on estimation since no accurate measure of distances was available to him. Guy pessimistically estimated the range at three million miles and hoped it good enough.

At least, no ships were within that range.

And since the barrier, when first established, had broken the far-flung contact maintained by the driver-detectors on Terra, Guy was safe until they could send out ships to intercept him.

He cursed the cardex files in all Patrol ships, and wondered whether he could change the *Loki* sufficiently to make it appear different to the sorting machines and the characteristic detectors. The detector impulses were based on the size, the characteristic radiation of the drivers, the mass, and the metal of the hull. Those four characteristics were individual and while some duplications occurred, sufficient evidence remained to pin the cardex-information down to a particular ship. Especially when this particular ship was being sought and others of the same characteristic would be catalogued as to course, and position.

He had the barrier, but he could not drive through it. He could hide, but when hiding could not run. He could run, but when running could not hide.

But he was the equal of the Patrol's best watchdogs. A bit of hare and hounds might come out with the hare a winner. At worst, Guy had nothing to lose.

XV.

His only hope of escaping detection was his knowledge that the negative-detector, developed in the *Orionad* for use against sub-ships was less sensitive as to range than the positive-detector. The establishment of negative evidence is never conclusive. And his souped-up detector would outrange any but another souped-up job.

So Guy coasted for days, which at five thousand miles took him far, far beyond the orbit of Pluto. Then he crammed on the deceleration and came to a stop, with respect to Sol, and then started back along a course several degrees to the south and thirty degrees to the right of Sol. He drove at the same 10-Gs for an hour and then closed the barrier about him once more.

Meanwhile, the mathematicians on Terra had been plying their trade. The Laws of Probability came out of hiding and became their favorite subject. Knowing his course and direction up to the first establishment of the barrier, which surprised them and caused them to dislike Kane that much more for having installed one on the *Loki*, they tossed their hypothetical coin, drew probability curves, made space-models, and came up with a flared cone, in which volume Guy must appear. And then they buttered their decision by stating that the cone held true only if Guy did not apply power in another direction.

They grinned, when they said it. It was thirty billion to one that Guy would apply power instead of just running off at five thousand miles per second until he hit the next star in line with that course.

So they sent out ships with souped-up detectors to follow the edges of the cone.

And Guy, running back Solward outside of the cone of expectancy with the barrier on, detected them at extreme range and laughed. He left them running in the opposite direction, and then they were far beyond range, Guy dropped his barrier and drove at an angle away from Sol which added to a quartering course from Pluto by the time he had the course corrected. He drove solid for days at 1-G, and then decelerated in an upwards vector which carried him a billion miles to the north of the Celestial Equator and ten billion miles from Sol. He turned again and ran tangent to the circle from his position to Sol, and dropped slightly southward. Again he came to a stop.

Then, with a sad shake of his head, he abandoned the *Loki*. He dropped from the larger ship in the tiniest of lifeships, and taking the barrier-generator with him, he let the *Loki* drive across the System towards Mephisto, while he in the lifeship gave a short, ten minute thrust at 10-Gs and set up the barrier again.

If any detectors had been close enough to catch him, they would be souped-up to the limit of gain, for his own super-sensitive detectors caught no pursuit. At that range, both lifeship and *Loki* would appear as a single drive, and when he disappeared, only *Loki* at 10-Gs

would remain to lead them across the Solar System towards Mephisto.

He laughed. If this chase had been a chase to the death, he'd have been dead by now. But they had preferred to let him think he was being let alone, or that they had lost him. He'd given them the slip, he knew. And if they were still on the lookout, they'd follow *Loki* right across that vast orbit and beyond Mephisto on the other side. Better than twenty billion miles!

And with *Loki* running on clockwork for the barrier, and with the autopilot set for a series of gyrations with an apparent ending of the course completely unpredictable and yet obviously better than fifty billion miles beyond Mephisto, in an area that covered as much sky as the orbit of Mars itself—

They'd spend a lot of time thinking of that one.

It was slightly funny, though. The Terran mathematicians did not know that Guy was starting for Pluto in the first place. They believed that the initial start was but a throw-off direction on the secret way to Ertene. They based their probabilities on that one fact, and built their house of mathematical cards on that false premise. They came up with what they thought to be a shrewd guess—and when the *Loki* was picked up rifling across the Solar System in the direction of Mephisto, they jumped up and down in glee.

The Laws of Probabilities had coincided with the Laws of Absolute Randomness, the basic rule of which argument is that there are no laws that prevail.

And while the Solar System combed the vastness of space beyond Mephisto for the hidden planet, Guy Maynard was coasting out of the Solar System on the opposite side, approaching the hidden planet in truth.

Guy was going slowly as spaceships travel, but he was secure in the belief that he was not followed. He wondered whether his arduous path had been really necessary. He'd given them the shake easily. Right on the first try, and from then on he'd been able to go free as he wanted. The rest of his manipulation had been insurance.

But there had been no pursuit. It was almost impossible to have flown the millions of miles he had covered in free flight along a course beside another freely flying ship without diverging or converging. That would take corrective driving, and the radiation would flare in his detector. He had seen none. He was safe.

He spent his time figuring, and trying to fix the position of Ertene. He corrected his fix time after time, and prayed that he was right.

And when he detected the great, nonreflecting sphere in space with his converted detector, he shouted in joy.

He passed Ertene and went beyond detector range by twenty million miles. Then he broke his barrier and directed the lifeship to the center of the big barrier over Ertene. He closed his own barrier

again and watched the blackness increase in size as he coasted toward it. He made contact, passed inside, and saw Ertene and the synthetic sun.

He kept his barrier on and approached the planet with the acceleration of falling bodies.

He hit the atmosphere and the falling velocity turned the silence of space-flight into a scream. He watched the pyrometers, and though the hull became hot, it did not become dangerously so. His velocity upon contact had been in thousands of feet per second, not miles, as would have been the case in a meteor.

The velocity dropped slightly; Guy calculated the terminal velocity of the lifeship at three hundred miles per hour, and with that in mind he began to figure furiously.

He had none too much time.

His automatic calculator ground out the answer. The best he could do was sixty seconds at 12-Gs! That would bring him to almost-zero velocity upon contact with Ertene.

He believed that sixty seconds would be short enough to escape detection by any but an observer expecting him. The recorders, showing a streak that ended deep in Ertene's broad ocean would be suspected of recording noise-transients instead of a signal. No ship would land deep in an ocean.

And it must be remembered that Ertinians were quite nonsuspicious, since they'd had no experience with disreputable characters for several thousands of years. They might not even have detection circuits working other than to enumerate the items that came in through the screen above. His barrier would not cause reaction with the big barrier about Ertene; it would have presented another problem of entering if it were so.

Guy sprawled in the flattened pilot's chair, took a deep breath, and then the autopilot threw on 12-Gs of deceleration. Sixty seconds later, the slowed ship splashed wide and beautifully into the ocean, and sank gently to the bottom.

And Guy spent twenty-four solid hours trying to detect the spurious responses that might emanate from a close-at-hand detector circuit.

No one came to investigate.

Running submerged, Guy went slowly across the ocean to the nearest land. He lowered the lifeship to the ocean floor beside a forbidding cliff and emerged, swimming to the beach several miles down the coast, clothed in spacesuit and bulging like a blimp with buoyant air.

He walked along the coast back to the spot above the ship, and cached his helmet and as much of the heavy equipment of his suit as he could remove. He loafed and rested until night fell, and then made his way toward the blinking lights of the city several miles in the other direction along the coast.

His following actions were not according to the code of ethics.

He completely submerged whatever conscience he had and proceeded along the back-ways of the darkened streets at an hour when most honest Ertinians were fast asleep.

Those who were not asleep were preoccupied, as he found when he almost passed within arm's length of a couple that were sitting silent and close together on a street-side bench as far from the dim streetlight as they could get. They did not see him, though he watched them and chuckled quietly.

He located the back entrance of a clothing store and tackled the lock with a bit of steel wire. He worked for an hour, undisturbed, before it clicked open. Then he stood up and went to work on the lock above the door that kept the alarm from ringing when turned by a proper key. Another hour solved that lock, and Guy entered the store stealthily. His action was quite logical. He went to the stock room below and selected one each of his size from the bottom boxes. He rifled the jewelry counter and selected a minor item or two with the Ertinian initial that signified the pseudonym of his choice. He took a few small coins from the register and then left, attired as an Ertinian.

They'd notice the discrepancy in time. But it would occur from time to time, as each rifled box was opened and found to be short. They might even put the shortages to error in packing instead of robbery.

He went directly away from the town, hiking along the road that returned him to his ship. Here Guy buried the last evidence of his Terran origin, and when the first rays of morning shone across the broad ocean, Guy Maynard became Gomanar.

He looked at himself. Gone were the Terran shirt and trousers. Gone were the low, soft shoes. In the warmth of Ertene, Guy was thankful for the abbreviated costume, and equally thankful for the over-all tan that came as a result of spending much time in space.

Blue trunks; loose, flowing shirt; hard-soled, high-laced boots of the softest material known; and a short shawl or cape that hung from the shoulders to mid-thigh in back. Maynard worried about the lack of pockets and found some difficulty in getting used to the cartridge belt effect that passed in place of pockets on Ertene. A small, hard handcase contained his razor and some spare items of clothing.

Maynard left Terra behind him beside the ocean, and strode along the highway. He continued to practice his speech and though he knew he was proficient, he worried about the first time he'd be expected to use it. But he could not remain silent forever, and so he turned into the first farmhouse he came to. Breakfast was his aim, and the sun was getting high.

He knocked on the door. A dog came rushing around the corner of the house, all suspicion, and smelled Guy's feet curiously. Then as Guy spoke to the animal, the dog backed up several feet and lay with chin on forefeet.

"Doda seems to like you," came the rich, pleasant tones of the woman from inside the doorway. "May I ask your business, sir?"

Guy smiled his best smile, usually reserved for special occasions. "I am named Gomanar. I am a migra-

fory worker in search of two items: Breakfast first and work second. Have you either?"

"Of course," smiled the woman. Her smile broke into a full laugh. "You'll not mind if we present them to you in reverse order?"

"You'll get the worst of the agreement that way," smiled Guy, cheerfully. "I'll work less on an empty stomach and then be hungrier."

"You look like the kind of man who can pack it away," she said. "It might be that you would eat so much that you become sluggish?" she finished with another laugh. Her eyes traveled up and down Guy's muscular figure and decided that sluggish was possibly the one way that this startling young man did not get. She turned and called: "Lors! We have a visitor!"

Her husband came to the door and looked questions at Maynard. He repeated his tale.

"Naturally," he boomed. "Naturally."

"Thank you," answered Guy simply.

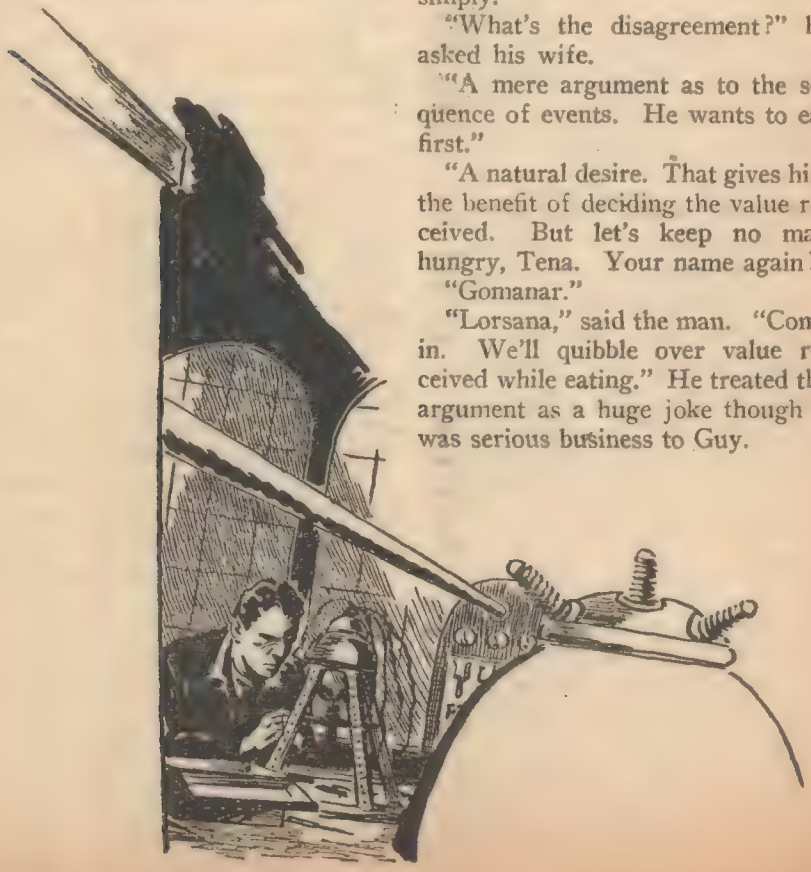
"What's the disagreement?" he asked his wife.

"A mere argument as to the sequence of events. He wants to eat first."

"A natural desire. That gives him the benefit of deciding the value received. But let's keep no man hungry, Tena. Your name again?"

"Gomanar."

"Lorsana," said the man. "Come in. We'll quibble over value received while eating." He treated the argument as a huge joke though it was serious business to Guy.



Breakfast was large and appetizing, and near the finish, Lorsana said: "You look as though hard work did not bother you too much. You didn't get that figure just roaming back and forth, performing odd jobs."

"I've managed to keep fit," said Guy noncommittally.

"I see that," laughed Lorsana. "But look, Gomanar. I need a helper for a few days. Have you ever logged?"

"No."

"Too bad, but not impossible. I'm clearing a bit of wooded land and need an experienced logger. If you'll help out until it's finished, I'll pay you the regular wage-level. Would you care to help?"

"I may at that. Yes, a bit of logging would round out a wide and varied experience."

"It's done then," laughed the man.

Guy thanked his active life. The job would have killed him if his muscles hadn't been in condition. It was hard, heavy work, and it covered long hours daily. At night, Guy crawled into his bed and slept like an innocent. And though he kept a sharp ear out for any mention of the System that Ertene was approaching, nothing was said in his presence. It worried him. Had positions been reversed, the subject would have been in every Terran radio and in every Terran newspaper, and a common subject for dinner-conversation.

When the work was finished and Lorsana paid him sixty Ertinian ronnads, Guy said good-by to Lorsana and his wife, patted the dog and left. The work had done him good. It had taken the newness out of his clothing and had filled his belt with good, Ertinian money.

But farm work was no place to make a start in life—from Guy's age, at least. So with regret, he left the farmhouse and trudged along the road for several miles until he came to a large city. He sought lodgings, bought dinner at a restaurant, and then on the following morning presented himself to a manufacturer of precision instruments.

His age and bearing seemed to have good effect, and he was given preference over several other applicants, and ushered into the employment manager's office.

"Be seated," directed the manager. He looked at the card in his hand and memorized briefly. "You're Gomanar. Call me Jerimick."

"Thank you."

"You seek technical work, Gomanar. Yet your card indicates that you have no formal education."

"I am well read. And I believe that I can hold my own ground with any college graduate."

"Perhaps. Have you attended any college or university, even for a single term?"

Guy had, but not for Ertinian publication. He shook his head and smiled defiantly.

"You understand that regulated study is far superior to the random investigations made at home?"

"If one marshals his mind to follow a prescribed pattern, the ill

effects of random study are not present."

"Quite true. I feel inclined toward you—Gomanar." He thought for a moment. "We have some instruments in here at present which require repair. There is no rush on a couple of them—I'm going to try you out, Gomanar, on these. You'll pardon my taking insurance by giving you those of little urgency first. If you succeed in your repair of these instruments in equal or better than the time normally spent by accredited employees, you'll be hired. Is it a deal?"

"I'm confident enough," laughed Guy. Small tools and instrument-work came as a second nature to the Terran. "Lead me to it!"

"I have but one objection to hiring a man like you," said Jerimick. "You'll prove an excellent worker—and in forty days you'll tire of it and go to wandering again."

"I can't answer that."

"I can. You've never had a woman thrown your way. Some day one will come along and tie you down, and the whole planet will be better off for it. You're the type that we worry about."

"Why?" asked Maynard innocently.

"You—and all your kind—are restless. You are always searching for something you can not find. I don't know what it is, but what you seek does not exist."

"You mean we're looking for something nonexistent?"

"I do."

"That's strange. After all, I've met my kind. They all seem intelligent. No intelligent man would search the world over for something that did not exist. Or is my logic false?"

"Sounds reasonable. Yet you explain it. I know your type. I've dealt with people for ten kilodays. I've consulted the brainiest psychiatrists on Ertene, and they agree with me. Your type," said Jerimick, "is restless. You are quick of mind, and sure of yourselves save for this unrest. You can turn your hands to any trade, and prosper, yet no trade offers you the outlet you seek. I'll wager my income for the next kiloday that you'll repair my instruments in record time—and wager the next kiloday's income that you have never seen their like before. You have an ability to visualize hidden details of operation and apply a sort of rule-thumb logic to them and make them work. And when you've discovered that your logic is good, you seek a more complex problem.

"I'm going to make a serious admission, Gomanar. I believe that your kind of man would be better off if Ertene joined Sol's System."

That stunned Guy. "I'd keep that idea beneath my skull," said Maynard.

"I know. I shall. It was merely hypothetical. I'm certain that it will go no farther. Besides, such a rash move would most certainly be bad for the great majority of us, though your kind might prosper."

"I'd really hate to see such a thing happen," said Guy.

"And that statement, I believe, is the voice of education, of training,

of conditioning. I doubt that you really know what is good for you!"

"We'll never know," said Maynard.

"No, please God," said Jerimick, fervently. "But both of us have work to do." He scribbled on a printed form, filling out less than one quarter of the spaces, and handed it to Guy. "Through that door and to your right. The medical examiner will O.K. you first, and then you'll be sent direct to your job. Luck, Gomanar."

"Thank you," replied Guy, worrying slightly about the examiner.

He discovered that the examination was as sketchy as the filled-in hiring-form. Within an hour he was seated at a bench with tools and equipment before him, and was whistling a cheery but tuneless melody as he delved into the insides of a small traffic-control that must be intended for local flier-traffic.

And so Guy Maynard came to Ertene.

XVI.

In the days that passed, Guy noted a tendency to show him deference. He could not understand, though he tried, why they would single him out above the others. When he needed a tool, and his actions showed that he was in search, a mere question brought immediate —not only results—but delivery to his bench.

They stood aside as he approached narrow passageways, and in a tight corridor they would back up all the way without a word. His own offer of retreat went unwanted; the other party retreated and waited with a smile until Guy decided that they had reached an impasse and went himself since the other obviously had no intention of moving.

He found this same condition prevailed throughout the city, too. They spoke to him seldom, yet he found himself with the best meals, the better seats, the quieter rooms, and the clearest path.

It took about twenty days of that to get Guy worried.

And since he became dead certain that they suspected him of being different, Guy left the city at night, and gave only a short note of thanks to Jerimick. He explained that his search required that he seek new fields. His only concession to Terran training was the night he selected. It was the night after payday, and it increased his tiny store of funds to a more reasonable value.

Guy took a night-flier and went halfway across the continent. It still followed him, for the stewardess gave him more than his share of attention.

Guy was not vain. No more, that is, than any other normal man. He knew that his figure was well-proportioned and did not require any apology in the abbreviated Ertinian costume. His features were regular, and though his thirty years was still considered young, the lines on his face gave him character. He'd been shaving within an inch of his life each morning and before dinner each night, and he knew that his beard was light enough to escape detection as long as he maintained that schedule.

This attention he was getting bothered him. He was not ready for attention yet. He'd prefer a couple of years to establish some sort of false foundation by skipping around from place to place, and losing his past in the maze of data.

What was worse, he could pin nothing down definitely. He wondered whether he might be guiltily self-conscious. That might be. But he'd been honestly critical and knew that Ertene was singling him out for something.

It was not the kind of attention that accompanied suspicion or notoriety. It was a universal will to help him, to offer him the best, to accord him some sort of deference.

But why?

His discussions with others were nonproductive. They spoke in vague terms until they heard his viewpoint and then agreed with him, and it was only with difficulty that he learned their true views were calculable only by the magnitude of their agreement.

For lack of anything more desirable, Guy took to walking in the evening. He covered miles in his meanderings through this city in the center of the continent, and in doing so learned very little, but at least it kept him from being everlastingly confronted by that unnamable acclaim.

Worst of all, most of them treated his name—Gomanar—with some amusement. Guy searched his mind, and knew that it had no amusing nuance by any stretch of the imagination. He wondered whether he had assumed the name of some famous man, but a search of the libraries gave him negative evidence—which in this case was fairly conclusive both for fame and for notoriety.

His work was well received. Even when he made errors, it was overlooked, and Guy knew that others were called to task for their errors.

At last he could stand it no longer, and since his position as an instrument worker placed him in contact with numberless small, technical parts, Guy pilfered them shamelessly, and started to make a thought-beam receiver in his rooms.

And that was a project that might take a year in itself.

But it would give him the answer.

Forty days after he arrived in this city, which contained among other things the most prominent university on Ertene, Guy was walking alone in his usual habit. His steps unconsciously turned toward the university campus, and as he neared the broad campus, the pleasant strains of music came to him. It gave him a lift of spirit, and his steps quickened until he was approaching a ten-deep ring of people surrounding the vast campus.

He stood behind them, trying to look between their heads, and his curiosity caused him to press forward. The man ahead of him turned, annoyed, and his annoyance turned to pleasure. He stepped aside and motioned Guy to take his place. Guy blinked, smiled, and moved forward; it had become natural to accept these offers. A

whispering arose, faint, unintelligible, insidious. Those in front of him pressed aside, one by one, and opened a lane for Guy until he could see the entire campus from the front line.

He remembered seeing a notice in the evening news; The University of Locana was holding the graduation dance for the upper classmen. It meant absolutely nothing to Guy, but the sight was interesting to see.

The gay colors, the glad music, the circling couples—were all cheerful until the music stopped with a sudden crash, and played a loud, joyous chord.

The orchestra leader pointed his long wand in Guy's direction, and from the maze of dancers there came a youthful figure, running.

"Elanane!" she called. "Oh, Elanane!"

He heard the whisper "—the lanee's sister—" and nothing registered save that this girl must be the sister of the elected governor of Ertene. He didn't know her, which he thought to be a shame since she appealed to his sense of appreciation as few other women ever had. He probably never would know her.

"Elanane!" she called as she approached her brother, who must be near Guy. He looked around to see who he might be—and when he looked back at her to get another "fix" on the line of her sight, to better follow her intended course, he found himself hurled back three steps as the girl ran, without stopping, right into him.

She hurled herself at Guy, hungrily, and hugged him until he felt his ribs complaining.

He grunted, and she stepped back to inspect him. "I knew you wouldn't miss it," she said. She was deliriously happy and went right on talking with the appearance of one who has had no one to talk to for several years. "I was worried—you worried me, Elanane. I actually thought you'd miss your sister's graduation, and I'll only graduate once. But you didn't."

Guy took the wise course. He said nothing. A protestation would have caused comment and questioning as to his real identity. An acceptance of the masquerade would set him up even afterwards as a liar and an open fake. He decided to brazen it out and hope for an opening that would permit him to get away without exciting more comment.

He wondered what her name was. A man should know his own sister's name.

"—ill, they told me. Unable to visit me. Elanane, you look the soul of health!"

Guy decided that an answer was necessary and he wondered about the tone of his voice and the characteristics of his speech. They would give him away. But a short, precise answer might not.

"I've had a sore throat," he said. He hoped that would explain the differences in tonal range.

"*Pooh!* Couldn't have been bad at all."

"They thought so."

"Why, you're not even hoarse!"

Guy decided that she was so elat-

ed at her brother's presence that anyone could sell her a bill of goods. "I'm not?"

"Not in the least. I don't think you were ill at all. You've been running all over Ertene again, Elanane, trying to make people think you are a vagrant, and trying to get honest information out of them. You should be ashamed, not trusting us!"

Guy Maynard felt a bit of worry. He began to wonder several things, among which were the answers to the questions of: One, was he completely insane; two: was he Guy Maynard, Elanane, or the reincarnation of Haroun El-Raschid; and three: how was he going to get out of this? He decided then that the first was possible, the last desirable, and the second highly questionable.

A bit of Terra's own private humor reared its horned head in Guy's mind and the forked tail glinted impishly over the ruddy forehead as the devil winked at him. Guy felt a hand-shaking acquaintance with the devil at that moment and decided to have something to remember, at least.

"I'm here," he told her, "to see your graduation. I came because you would be hurt if I remained away, and because I wanted to see you happy. But I'm holding up the proceedings here, and not even a lanee should demand that your ceremonies be interrupted for a whim. I'd stay, but I have work to do—and believe me if it did not concern the integrity of Ertene I'd remain and watch. But you go back to your dance and I'll be with you later!"

"That's a promise, Elanane?"

"A promise. Now give your big brother a kiss and go back to your ceremony."

"A promise," said the girl to seal the agreement. Her kiss was affectionate but sisterly, and Guy wondered afterwards why he expected anything but a sisterly kiss from a sister. Then she turned and went back to her partner. The music began again, and Guy stood there watching. To rush off would excite suspicion, and though the nerves up and down his spine were tingling, Guy stood there brazenly, fighting that rising impulse to turn and bolt.

Then feigning sorrow at having to leave, Guy turned and made his way through the crowd. A man behind him shouted: "All right, folks! It's no secret now! Do you like him?"

The roar of cheers that went up nearly staggered Guy.

Elanane must be one swell person, thought Guy. Well, that was that. Now what? Disguise upon disguise? He was a marked man, just as much marked as if he'd permitted his whiskers to grow.

He cursed Elanane for his looks, and wished that the lanee of Ertene had been possessed of brown eyes, a hook nose, and a cleft chin—or that he did. Well, now what—?

Guy didn't know.

The next move was made for him. A man came up, tapped him on the shoulder and said: "Thomakein will be glad to see you, Elanane."

Guy squirmed inside. He'd never

seen Thomakein, but he'd heard plenty about this Ertinian. On the other hand, Thomakein had seen him on his previous visit to Ertene, and Guy knew that Thomakein might have seen him without his mustache at one time, for he vaguely recalled having been shaved clean at one time during his convalescence. He turned and looked behind him.

A second Ertinian smiled widely. "Thomakein said you were playing the vagrant again, Elanane, and that he insisted that you come immediately. Things require your personal attention."

Guy knew that violence would result in only one answer—he'd be taken horizontal instead of vertical, and resistance would show Thomakein that he meant harm. There was still the partly-finished thought-beam receiver in his room—

"Where is he?" asked Guy.

"Come," said the first Ertinian. He led the way for several yards, and then fell back as the other Ertinian came up to walk on the opposite side of Guy. Guy felt like a prisoner making his Last Mile.

"Look, boys, I'm really not Elanane."

"We know you aren't," laughed the first one. "What name are you using this time?"

"Gomanar."

"Not too good," laughed the one on Guy's left. "You did better as Inualdi the last time."

"You'll excuse us," smiled the first, "if we treat this matter lightly. You know us and we know you. Furthermore, we know you know us and you know we know it. We'd like to follow your wishes, Elanane, but we cannot think of you as anything other than Lanee Elanane. May we have your forgiveness?"

Guy smiled, nodded, and gave up. To himself he admitted that he was licked. Whatever his next move was, it was out of the question now. It must be a spur-of-the-moment plan, Guy thought, and he decided to bluff it out as long as he could. He'd try valiantly, for if Ertene failed him, he was a man without a planet.

He reminded himself that he had one ace in the hole. The partly-finished thought-beam instrument. If they questioned his motives, he could ask permission to finish that and let them see for themselves that his interest was only in saving Ertene.

With the eyes of his captors on his back, Guy strode across the cabin of the luxurious flier and without hesitation opened the door, stepping into the inner compartment.

He had little hope that he would be able to fool Thomakein, but he must try.

The door swung shut behind him, and as it slammed, the flier lifted into the sky, effectively cutting Guy's retreat completely.

"Come in—sit down," greeted the Ertinian.

"You seem to have been expecting me?"

"Yes—but we knew you'd show up sooner or later. Had things become acute, I think we might have made an open appeal. But you are in time."

"Anything urgent?"

"The Terran, Guy Maynard, ah —talked open!"

"Uh . . . he—What?"

Guy blinked. It was too close to home not to stagger him. This was one place where he'd be forced into carefulness. He'd have to watch his step. Discussing himself as a third party was more than likely to bring out too many things that he, as Elanane, could not possibly know. If he were to fool Thomakein—and it looked all right at this point—he'd have to submerge himself in Elanane's unknown personality, and use Elanane's unknown knowledge. That could be done by permitting Thomakein to do all the talking. Well, he'd permit Thomakein to talk continually.

And then it filtered into Guy's dazed mind that the last words had been spoken in Terran. The term "Talked open" was a Terran idiom —and—

It had been expressed in Terran!

"You seem surprised, Elanane. I'm amused. Really, I'm sorry that the shock should come to you this way, Guy, but you have lost all resemblance to Elanane in the last few minutes. Guy, don't you recognize me?"

Guy stood open-jawed and stared at the Ertinian. Slowly, uncertainly, Guy shook his head in negation.

"I suppose that surroundings and dress do have a lot to do with recognition. That plus the fact that you never expected to see me here on Ertene. I am in strange dress, in an imposible place, and you do not know me. At your expense, Guy, I'm amused." Thomakein went into a deep laugh.

Guy was irritated, but he said nothing. He was still dazed. "Thomakein—Thomas Kane!" he said after a full ten minutes had passed.

"Fine! So you do recognize me? Shake, Guy. If I'd not known your intent, I wouldn't know you either in that Ertinian get-up."

"But . . . but—?"

"There's one thing you'll need, Guy. Your face shows the effect of so much daily shaving. We'll have you whisker-free in three days, Guy, using a permanent depilatory often used by some of us who are unlucky enough to retain a few facial hairs. Then you can go on without worrying."

"But—?"

"Forget everything for the moment, Guy. I want the answer to one question. Will you swear that your desire is for the good of Ertene?"

"I swear that—I came to see if I could undo the damage I started."

"I knew we could count on you. We still can—and will. Now listen, and I'll tell you my end of this long and complicated tale. And, Guy, it is complicated beyond imagination. Confound it, remind me to call you Elanane. I might slip and that would be bad. You'll be Elanane for some time, you know, and you must be Elanane to the letter. Sit down and I'll begin to talk."

"I'm dazed."

"You must be thunderstruck. But you won't really feel the shock for a couple of hours. I'm going to do my talking now before shock sets

in, and you'll be able to evaluate both sides at once. O. K.?"

"Well, to tell the truth, I feel that an explanation is due."

"It started with a coincidence and swiftly built up into an impossible necessity, Guy. First, an explanation of my actions. Ertene does not kill unless it is necessary, Guy. You won the liking of too many men; to eliminate you would have gone against the grain. You are a likable, innocuous chap, Guy. You are intelligent, quick, ingenious, and ambitious. You have few bad traits and vindictiveness is not one of them.

"However, since you were set free, and a living danger to us in spite of our drugs, plus the desire on the part of Ertene to learn all we could of Terran science—and what makes Terra run—I was appointed to the unenviable position of spy. Fortified with unlimited wealth, I purchased my way into the high spots. I took a sincere liking to you too, Guy, and together we climbed to a place near the top. I reported regularly to Ertene, and we are in possession of Terra's every secret. Believe me, it was necessary."

"I can see that," said Guy. "Ertene has never wanted to join Sol, nor wanted any part of us."

"Correct. You also realize that Terra would try like everything to keep us once you knew where we were—and that we were. You do not begrudge us Terra's secrets, Guy, because you believe in Ertene's ideal.

"Seven decdays ago, Elanane died. Ordinarily we would hold an immediate election to select a new lanee. One thing interfered. There is a faction on Ertene that desires conquest. Why, I do not know. They do—that's all. They are powerful, and the death of Elanane put these people in the limelight—or would have if his death had been disclosed. Therefore, knowing the majority of the people were against union, we kept Elanane's death a secret. We hired an actor for a few days—twenty or thirty. He is one of us, and one of the few who really know."

"How many know?"

"Believe it or not, Guy, less than ten men on all Ertene know that Elanane is dead. Members of the Council, even, are not all in the knowledge. Too many knowers make a bad secret, Guy. Now comes the coincidence."

"Me?" asked Guy in surprise.

"You," said Thomakein, nodding his head in amusement. "Your likeness to the assistant lanee on your initial visit was a factor in your freedom, Guy. Had you resembled one of our hateds you might not have had your chance. But people and human nature are funny. Resemblance to a loved character is a fine way to get yourself liked in an alien land. You resembled the assistant lanee then—and he became lanee not many decdays after your return to Terra. When, after his death, you became involved in the trouble on Terra and headed this way, I came to the conclusion that permitting you to masquerade as Elanane would serve us well."

"It sounds thin to me," objected Guy.

"I'll explain why you are a logical man. I've been the only one with contacts in your system. My stories about Terran prowess in the art of war have not been too well received. Most of Ertene do not understand your ability to take two widely divergent arts—luxuries, even—and combining them into hard-hitting weapons. Ertene would never think of using the barrier for a thing of war—yet you did it in a few weeks. That's one example.

"Now Elanane was openly against any traffic with Terra. You are Elanane. If we elected a new lanee who believed me and armed Ertene, those who desire conquest—and they really mean conquest—would use that as a lever. Their propaganda would direct everyone to the thought that the new lanee believed in conquest. In spite of previous thought, that conquest would be desirable and that he was preparing for eventual war. Follow?"

"I think so. If Elanane ordered that Ertene be prepared, no such propaganda would hold water. With Elanane, it would be strictly defensive armament. Is the fact of our resemblance clear to Ertene?"

"Uh— Oh. You mean the resemblance between the races. No. That would excite Ertene even more. Generally similar, yes. But the identicalness has been withheld."

"Do they know of me?"

"Vaguely. We caught a denizen, baffled him, questioned him completely, and strove to cure him of terrible MacMillan burns but failed."

"Too bad you couldn't use his open talk as a lever to gain your ends."

"No. We can't. But you'll help?"

"I must. It was my foolishness that put Ertene in danger. I'll strive to help Ertene as best I can. How am I to fool my friends?"

"With my help. You are a closer double to Elanane than you think, Guy. Even Leilanane, your sister, is fooled."

"I won't fool her too long," smiled Guy wryly.

"You will. Leilanane has been in school for four kilodays and her contact with her famous brother has been limited to scant visits, letters occasionally, and the visibox broadcasts every decday. People change —so have you changed. Oh, you've been ill and your lapses will be forgiven."

"I hope."

"Why," laughed Thomakein, "your predecessor even had the habit of masquerading so that he could get the un-retouched opinion of the man in the street."

Guy understood the meaning of the deference, the willingness to give him the better portion, the smiles and amusement at the name Gomanar, the willingness to accept his scant record as experience. A lot of things became clear, and he smiled, wiped his face with his open hand and said: "Thomakein, my heart is with Ertene. I feel that I have failed you in one thing. But

with my knowledge of Terran strategy plus my high position on Ertene, we'll do everything in our power to keep Ertene free!" Guy's face brightened at the thought of far horizons, "I'll see another system some day. Perhaps . . . Thomakein, has Lanee Elanane a wife or do I start from scratch?"

"I'm afraid you'll have to remain single—or give up the idea of children. I doubt very much that any offspring can come of a union between Terra and Ertene. You might marry, but you'll remain childless."

"At least I'd have company," said Guy, "or would I be likely to talk in my sleep?"

"Your trouble was something we of Ertene hadn't anticipated. It was twofold. You imbibed considerable of the higher alcohols, which exert a temporary nullifying effect on our super-drug. It is of the iso-dinilamine family too, you know. Well, that, plus your ingrained desire to tell people off after being goaded to the screaming point did it. You actually willed yourself to speak—and speak you did. Nothing Ertene could have done would have saved you, Guy, and so I am not holding you in blame."

Guy nodded, and then said: "Not to change the subject, Thomakein, but haven't you the ability to become lanee?"

"My liaison work with Sol kept me too much out of the public eye. Also, I am the only one who had contacts there. I'll have to return from time to time, too, which would interfere with being lanee. No, you're the man, Guy. We'll play this our way, you and I, and we'll get our answer that way."

"O. K. I'll play."

"You're tired."

"I am."

"Also slightly whirly, I imagine," grinned Thomakein. "Well, Elanane, you may sleep in the royal apartment tonight. We'll be there shortly. One more thing. You'll see Charalas. He's not aware. But you'll be hidden because of your resemblance to Elanane and the Ertinian dress, and so forth, plus the idea that no one—no, never—would ever impersonate the lanee! The latter is going to get us over a lot of close spots, Guy."

"I won't fear meeting Charalas. As long as you think I'm capable, I must be. You know the answers to this problem, Kane."

"From now on, it's Thomakein," reminded the latter. "And don't forget it for your life. That's one job—remembering one another's names—that we'll both have to work at."

"Right—Thomakein."

"Dead right—Elanane!"

XVII.

In the lanee's apartments, Guy sat down to think. It was morning, breakfast was over, and Guy had enjoyed a full night of deep and honest sleep. He had analyzed things to his satisfaction right up to the next move, and that troubled him.

There was no doubting Thomakein's statements concerning the need for masquerade, though Guy

wondered whether it wasn't slightly off color. But Thomakein was of Ertene, and should know the temper of the Ertinians better than any Terran. Certainly there was no doubting Thomakein's ideals. And as for his friendship—that was well established.

But Thomakein was a little glib in expecting a rank outsider to come in and masquerade as a Public figure. It would be hard enough to act as a mere citizen with no popularity, let alone a rising, popular, and well-balanced governor of a planet.

He fingered the book of Elanane's friends and their descriptions and habits, and despaired of ever being able to call them by name, much less knowing them well enough to discuss their favorite subjects with them. It was a heavy volume, and Guy knew that Elanane was very much loved by his people.

Habit set in at this point, and Guy opened his little kit to shave before he recalled the depilatory that Thomakein gave him. Shaving, for Guy Maynard, was over forever since his trial of the rather tingling unguent that morning.

But—beside his razor was the partly-assembled thought-beam instrument. Guy laughed aloud.

This would put him in the possession of anything that was needed. And Guy grinned again. This was his secret. Let Thomakein think that he was really brilliant. He'd use the thought-beam gadget for himself, and use it for the best. Besides, letting knowledge of the thought-beam instrument out would be as dangerous for Guy on Ertene as it would have been on Terra. No one alive, save Guy, knew of the instrument. Its inventors were dead and gone and every instrument of its kind a smoking mass of burned components. For his own protection, he would keep this one secret.

He snorted in derision. Would he never finish having secrets to keep? Was his life to continue with one important phase hidden from the world? Would he never be free?

Or, came the comforting thought, do all men have something hidden from their fellows?

Finishing the instrument was impossible at the present time. That would take some work. But if Guy by-passed some of the finer circuits, he could at least gain a crude idea of a man's surface thoughts, especially if they were directed at him. Guy started to hook the partially-completed instrument together, and considered the effectiveness of the instrument.

It was small, luckily. It fitted one pouch of the pocket-belt to perfection, and Guy closed the flap over the instrument and snapped the little catch with confidence.

Guy nodded. Then he rang for his valet.

"You rang." It was an introductory statement rather than a redundant question, and it held none of the abruptness that a query as to the wants of the lanee might have held.

Guy faced the Ertinian and read in the man's mind that his name was Willadoran. "Willadoran, when is Leilanane expected to arrive?"

In the man's mind Guy could see admiration for his lance, enhanced since the busy governor had time to think of his younger sister no matter how busy he was.

"Sometime today," answered Willadoran.

"I wonder if I'll have time to see Charalas first."

An annoying thought crossed Willadoran's mind—had Elanane forgotten that Charalas never awakened at this time?

"I mean after Charalas arises," amended Guy.

Elanane must be reading my mind, came the amused thought. "I'll see," came the reply, "that he is informed of your desire as soon as he awakens."

"Good." said Guy. He reminded himself never to take an expressed thought for speech. He smiled inwardly at Willadoran's amusement and wondered what the valet would do if the truth were known. Willadoran was highly amused at the idea that Elanane was a mind-reader, and considered the act utterly impossible.

A deep-seated impulse to shock the valet crossed Guy's mind, and it was only with trouble that he stifled the impulse.

Guy tried to discern Willadoran's thought concerning Charalas again, but it was a blank. Thomakein was blank, as was Leilanane, and Guy decided that his instrument was not sensitive enough to dig these deep-seated thoughts out of the below-threshold level. Only the surface thoughts were available—which, thought Guy, were sufficient.

Guy spent an hour speculating, and roaming the apartment to investigate its mysteries. Then Charalas came.

The neuro-surgeon smiled affably, looked around, and asked: "Well, where is it?"

Guy started, and then smiled. "You're slightly earlier than I expected." He went to the cupboard indicated in Charalas' mind and returned with the toran set. He was about to ask: *white or black?* when he perceived that Charalas expected the black men since he had been victorious on their last game. Reading the positions from Charalas' mind, Guy set up the various men upon their proper squares, and offered Charalas the first move, which was proper.

Guy's knowledge of chess was fair, and toran was an Ertinian version of the ancient Terran game. He had no idea as to the moves, but —Charalas thought: *Elanane always counters my first move by counter-attacking with his vassal.*

Guy moved the minor piece up to confront the other.

Charalas covered his pawn with a major piece and Guy countered with exactly the one thought that Charalas hoped against.

Charalas set up a complicated trap, and sat back thinking: *Let's see you outguess that one, Elanane.*

Guy wondered about the move of the castle piece, and touched it briefly. *Four moves in any direction,* came Charalas' thought. Guy moved the castle, and Charalas thought: *Now why did he do that?*

(*Continued on page 134*)

FRAGILE!
GLASS!

In this respect, we are luckier than we deserve owing to the fact that the Pleiades are endowed with large gobs of that elusive quality called photogenic. Judging from the number of old plates of this cluster lying around, one of the first things an astronomer does after getting his observatory set up is to photograph the Pleiades. There is a real reason for this popularity, however.

For nearly sixty years astronomers have been toiling off and on at a project for photographing the whole heavens according to a systematic plan named the *Carte du Ciel*. These *Carte du Ciel* plates were to be taken in the same way on photographs that covered four square degrees of sky at a focal length of F:10 with an exposure of about three hours. Now the Pleiades contain both bright and faint stars over an area of just about four square degrees. The nebulosity around the brightest stars—to be discussed later—will begin to show after an exposure of three hours with a telescope of focal ratio F:10. Thus the Pleiades became a sort of trial horse for *Carte du Ciel* plates. These old test plates when combined with more recent ones have added enormously to our knowledge of the cluster.

Oddly enough, the very brightest stars, which can be identified as Pleiades at a glance, give the poorest values for the velocity of the cluster. On a suitable exposure they look too big, too fuzzy, too overexposed to give reliable velocities. The moderately faint stars are the ones we have to rely upon the most. As we go to fainter and fainter stars, the number found having velocities identical with that accepted for the cluster increases as would naturally be expected. (There are more faint stars in the sky than bright ones). But since there must be a limited number of stars in the cluster if we keep on counting them, we should get near the end after a while. It is roughly analogous to the decrease in the number of banks that failed during the depression. They began to drop off after a while because there weren't so many banks left to fail.

The Pleiades do not seem to operate on this principle. Up to date we have no indication that we are approaching the limit. In 1929 astronomers thought they might be nearing the end. To be very conservative they estimated the total number of stars in the cluster at two hundred. But the most recent count that goes down to magnitude 17.5 reveals there are plenty of Pleiades left. No one dares to set the limit. Estimates center around one thousand with two thousand as a distinct possibility.

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Westinghouse

Courtesy General Electric

into any conceivable shape. In the hands of an expert glass blower, the most astonishingly intricate tubes-within-tubes complexities can be built up readily and rapidly. Because it softens only when heat—lots of it—is applied, it can be made to bulge in or out wherever the worker wills by applying pressure or suction to the whole structure, and adding heat only at the desired point. Because it "wets" metals, absolutely vacuum-tight seals can be made. Because of its extreme rigidity, exceedingly accurate dimensional placement can be made, and held.

It's the ideal material, in many respects, for lenses, because of that rigidity and permanence. It's hard enough to resist most scratching, but the proper abrasives can shape it with perfection. Under the intense local friction where a microscopic point of a microscopic abrasive grain meets the glass, the thermoplastic property manifests itself, and local fusion takes place—resulting in the shining surface of polished glass.

Whether it's a mirror to bring in the light of distant galaxies, a complex apparatus of tubes, magnets, and electrostatic fields to separate chemical elements in a mass spectrograph (page 101), or the evacuated tube of a million-volt X-ray machine (page 102) one or more of the unique physical-chemical properties of glass makes it the technicians choice.

The mass spectrograph uses glass because it can be evacuated readily and well, and because it can be shaped easily into the complex tubing needed. And—because it is an electrical insulator that will allow the establishment of electrostatic fields, and nonmagnetic, so that it does not interfere with the magnetic separator fields.

In the X-ray tube, its electrical insulating properties are essential—but it's a little too good. The metal doughnut affairs spaced at intervals down the tube are to make sure that the distribution of voltage down the tube will be more nearly uniform. There is bound to be a certain amount of leakage current flowing across the surface of the glass tube, due to dust, humidity, a hundred and one causes. It is equally certain that the leakage currents will be unequal—those between point A and point B on the same side of the tube, and between point A and point C on the other side of the tube, and thence to D a little further down, will be unequal. That means that D will probably be at a slightly different voltage than C, and C at a voltage different from B. When you're working with one million volts, even one percent comes out ten thousand volts—and ten thousand volts creates an electrostatic field that will markedly deflect a beam of electrons. That deflection would, furthermore, vary erratically with the relative humidity, the accidental fall of dust, and where the last workman left a fingerprint to collect extra moisture. The metal doughnuts distribute the potentials evenly at short intervals, keeping those leakage potentials small enough to be harmless.

THE END.

The Helpful Pleiades

by R. S. RICHARDSON

***The** Pleiades, the Seven Sisters of the Greeks, are the Seven Useful Helpers of modern astronomy—only there are some two thousand "sisters." They're wonderful things to do your measuring and instrument-calibrating on—*

With the rapid Pleiades, even
Which were seven
—Poe

It was just a little over a century ago that the German astronomer, Maedler, of the famous planetary team of Beer and Maedler, published a statement to the effect that Alcyone, brightest of the Pleiades, was the long-sought "Central Sun" around which all the other stars revolved.

Why he picked one of the Seven Sisters for the hub of the universe is a mystery which no one, including Maedler himself, has ever attempted to explain. There has never been the slightest observational evidence to support such an hypothesis. It was immediately nailed by Maedler's contemporaries and even Maedler never pushed the idea very hard. Yet for more than one hundred years in the face of world-wide condemnation it has refused to down. The last time I saw the assertion made as if it were an established scientific fact was in an editorial by the late Arthur Brisbane.

Far be it for an astronomer to give the astrologers encouragement, but if I wanted to demonstrate the effect of the heavenly bodies upon mortal affairs, I would unhesitatingly select the Pleiades as the outstanding example. It is as if there were some magic power emanating from this sparkling patch of sky

Fig. 1. Moving in on the Pleiades astronomically by successively more powerful instruments, we can start with Yerkes' 3.4-inch Clark lens.

able to cast a spell over the minds of men regardless of time and country. In the history of every race will be found the same legend connecting the innocent-looking Pleiades with some dread calamity, some dire catastrophe, some awful moment in the dim past of our planet.

For when the Pleiades are riding high, then was the time when ancient peoples held their most sacred rites for the dead. The Greeks and Romans reared temples to the Pleiades; the Druids held their three-day Festival of Death on All-hallows' Eve in honor of the Pleiades; the Aztecs offered human sacrifices to appease them. Six faintly glittering stars that have held the human race in thralldom for how many thousands of years!

Modern science has naturally done a pretty thorough job of blasting all the old hocus-pocus about the Pleiades. To the Greeks, the star Maia was the most beautiful of the Seven Sisters, who married Jupiter and became the mother of Mercury. Today Maia is down in the books as 20 Tauri, spectral class B5, color index -0.20, with a photographic magniture of 3.8. Astronomers have taken the glamorous Maia apart until she has no more secrets left. They know how hot her photosphere is, how fast she is traveling, and where she is headed.

Does this mean the Pleiades have lost their age-old fascination for men? Not at all. Now as never before astronomers are concentrating their telescopes in the direction of right ascension three hours forty-three minutes, declination North twenty-four degrees. For the Pleiades have developed into the most valuable test bodies in the heavens, an isolated drop of space-time in which stellar dynamics and stellar evolution can be watched as intently as the biologist watches the creatures swarming under his microscope cover glass.

Since I can scarcely expect all readers to be familiar with the appearance of the Pleiades, before going farther it might be well to take time out for stellar identification. Next to the Big Dipper the Pleiades are probably the best known and most easily recognizable group in the sky. The cluster consists of six stars of the third and fourth magnitudes in an area the size of the full moon. They are arranged like a little dipper with the handle in springtime pointing up. You can't miss them.

Upon first sighting the Pleiades, if you have the instincts of a normal human being, you will begin trying to see how many more stars you can count than the six that are visible to everyone. But do not expect to count more than six unless the sky is clear and dark and your eyes have had time to build up their visual purple to the limit. If you can only count six, try glancing at them sidewise by averted vision. (The interior surface of the eye is lined with light sensitive "rods" and "cones". Only the rods respond to very low intensities. When you look straight at an object

the image falls mostly upon the cones. Glancing at it sidewise the image falls on areas containing cones where your vision is more sensitive). You will doubtless get fleeting impressions of other stars but it will be hard to fix their position.

Figure 1 is a diagram of the Pleiades made from a naked eye examination by Professor M. Moestlin, instructor in mathematics at the University of Heidelberg. It shows eleven stars all correctly spotted in the cluster. How do we know that Professor Moestlin wasn't cheating on us? Because he made this diagram in 1579, some thirty years before that Dutch spectacle grinder's apprentice got those two lenses lined up with a church steeple or whatever it was that happened to catch his eye. And there are even people who claim they can see fourteen Pleiades!

I suppose the main reason why the Pleiades have always received so much attention is because they are the only open cluster in which the individual members can be discerned without optical aid. There are plenty of clusters like the Pleiades—four hundred have been charted along the Milky Way—but none so bright as the Pleiades. Others such as the double cluster in Perseus are dim patches similar to comets. Turn a pair of binoculars on them and their real nature is immediately apparent.

This always seems to be the case in science—there are all kinds of amazing things waiting to be discovered just on the limit of our ability to detect them. The mountains of the Moon, the cheese mite, cosmic rays—how different history might have been if nature had endowed us with senses just a trifle better than we now possess! Then don't forget that a gain of two magnitudes in stellar brightness from twenty-one to twenty-three was ever promised for the 200-inch.

One of the handiest things about the Pleiades from a strictly practical standpoint is the fact that they are ideal for the purpose of calibrating a micrometer. A micrometer, it will be recalled, is a device that screws into the eye end of a telescope for measuring angles in the sky; the diameter of a planet or the separation between double stars. But before you can measure any such angles it is first necessary to find an angle in the sky that has already been accurately measured. The best way to do this is by measuring the north and south distance between a couple of close catalogue stars.

Now with three hundred thousands stars in the catalogues it might be supposed an astronomer could aim his telescope at any old place and hit a suitable pair. But pairs that satisfy all the necessary and sufficient conditions are so scarce as to be almost nonexistent. It might be supposed that in a country of one hundred thirty million people there would be more than a dozen who could qualify as presidential candidates. Well, qualifications for micrometer stars are just as hard to meet as presidential requirements.

In the first place, the stars must

Fig. 2. And about a hundred light-years nearer, as seen with Yerkes' 10-inch Bruce lens. The larger lens brings out more background stars.

Fig. 3. The nearer we get, the faster the cluster expands. This was also taken with the 10-inch Bruce lens, but covers only 4° of the sky.

lie almost exactly on a north and south line. They must be equal in brightness. They must be nearly the same color. The stars must be far enough apart so that several hundred turns of the micrometer screw are needed to go from one to the other. It is like finding the length of a rod by laying it end-for-end over a known distance. You can get the length of the rod more accurately from a known distance that takes in a hundred lengths than one that includes only half a dozen.

Finally, since stars far enough apart to get in several hundred turns of the micrometer screw cannot both be seen together in the field of view of the telescope, there must be several good intermediate stars between to serve as way stations along the line of measurement from one to the other.

But worst of all, only the positions of a relatively few stars are really known with accuracy. The great majority were determined by mass production methods. Believe it or not, the star catalogue used most often by astronomers today was compiled between 1852 and 1863 by three men who measured the positions and magnitures of 324,198 stars. Which figures out to be at the rate of over eighty stars per night including Sundays and holidays with no time off for cloudy weather.

When these conditions are applied one after another the likely candidates fall rapidly by the wayside until none but the Pleiades remain. By using eight pairs of Pleiades, Barnard calibrated the micrometer of the 40-inch telescope of the Yerkes Observatory to a ten-thousandth part of a second of arc. To get an idea of what a ten-thousandth of a second of arc looks like in the sky, think of the tiny disk of Neptune which can barely be distinguished from a star, as divided into twenty-five thousand equal parts. Each one of these parts will be the size of one ten-thousandth of a second of arc. Even after all the celestial conditions were satisfied a few terrestrial ones remained to be eliminated. It was found that readings taken during the course of the year showed disquieting errors amounting to several thousandths of a second. These were traced to changes in the 40-inch lens due to differences in temperature between summer and winter—the focal length altered by three-quarters of an inch!

It may be somewhat of a surprise to hear that clusters like the Pleiades have been of great value in testing the theory of relativity.

Of the three methods Einstein gave for proving his theory of general relativity, the one most readily capable of direct observation is the deflection of light at the sun's limb during a total solar eclipse. (Another example of a fascinating effect just on our limit of perception). But to demonstrate the existence of such a deflection and prove it is due to the curvature of space and not the softening of the emulsion on the photographs, it is necessary that the sun be surrounded by an abundance of stars to be de-

flected. If an eclipse occurred in Virgo or Aquarius it would be of little value for Einstein effect, since this region of the sun's path is a barren desert of stars. It was for this reason that Sir Frank Dyson, the Astronomer Royal, as early as 1917 began a campaign to arouse interest in the total eclipse of May 28, 1919. Why? Because the sun would then be enmeshed in the Hyades cluster and literally smothered in stars.

As a result of Sir Frank's publicity campaign, the British alone made a determined effort to detect the Einstein deflection from stations in South Africa and Brazil. Clouds interfered in South Africa and the telescopes were out of focus in Brazil. But enough plates of good quality were obtained to show the practicability of the method under favorable conditions. If the eclipse had been a week earlier, the sun would have been among the Pleiades instead of the Hyades.

Looking at a photograph of the Pleiades one cannot help but ask himself: Which stars belong to the cluster and which are field stars that just happen to be in the line of sight?

Studying a photograph such as Figure 2 our intuition tells us there are a dozen stars that undoubtedly belong to the cluster. We would be willing to give even money that perhaps a dozen more are Pleiades. But for the others it would be mostly guesswork. In order to be sure a star belongs in the cluster obviously we must have some better criterion to go on than just a hunch about it.

Picture yourself gazing out over the sea into a sky filled with airplanes flying at random at all distances and all elevations.

Visualize the planes as being so far away that they cannot be identified from their insignia and design. We know these planes are all our own except for a formation of twelve reported to be trying to penetrate the coast line in disguise.

To pick out a widely dispersed enemy formation through a screen of other aircraft would certainly be a hard job if we were limited to a single glance. But if we could take a series of photos of the planes at short intervals, comparison of successive shots should enable us to identify the enemy formation as surely as if the Rising Sun were emblazoned on their wings. For the formation would be immediately recognizable by their common speed and parallel motion as contrasted with the random flight of the planes around them. (It is true that a United States plane might accidentally be included that happened to be moving with the same speed and in the same direction at the time.) See Figure 2.

Application to the Pleiades is obvious. Measurement of a single photograph tells us nothing. But comparision of a plate taken tonight with plates taken ten, twenty or forty years ago enables us to identify the Pleiades as readily as we identified the planes in the enemy formation by their identical velocity arrows.

Fig. 1. And now, with the Yerkes 21-inch reflector, the nebulous veils, completely obscure the blue-white giant Pleiades, and the immensely tenuous clouds that link the stars that make up the cluster become clearly visible.

Fig. 5. Taken with the big Mount Wilson reflector, the star Maia alone remains in view, barely discernible through the interstellar mists. Notice the clear evidence of vast, sweeping streamers in the clouds.

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could be determined very closely. It is for the same reason that meteor trails when plotted and continued backward seem to intersect at the radiant. In reality, the meteors are moving along parallel to each other but perspective gives the impression of radiation from a point.

If in addition to being able to get the direction of motion of the formation, we had some radar device that would measure the speed of the planes directly toward or away from us, then a little trigonometry will show that their distance can be found at once.

Returning to the Pleiades, it is one of the triumphs of practical astronomy to record that for certain open clusters the velocity arrows of the separate stars when plotted are seen to be not *quite* parallel, but converge or diverge toward a common point. Talk about precision flying! How about precision stellar measurements?

To determine the speed in his line of sight the astronomer has a more sensitive instrument even than radar —his spectrograph. If he can get the motions of enough stars in the cluster at right angles to his line of sight to find the direction of motion, and then can get the motion in his line of sight of a single cluster star, he can calculate the distance of the whole cluster.

The cross motions of the Pleiades are known very accurately and the line of sight velocities of many have been spectrographed and measured. It will now come as an anticlimax to relate that this method fails on the Pleiades. Trouble is the cluster is too compact to locate the point toward which the arrows converge with the necessary precision. But the method has been applied with great success to other moving clusters such as the Hyades, fixing its distance at one hundred thirty-five parsecs. As the old professor used to say, "Although the experiment has failed, the principle remains the same." (Math sharks see Note 1 at end of paper).

However, once we have gotten the stars in the Pleiades sorted out so that we know definitely which ones belong in the cluster, then the distance can be found through application of an entirely different, albeit not so accurate, method. It is not giving away any trade secrets to reveal that astronomers are never stumped for some way to get the distance of a star. They have more shoestring methods of getting stellar parallax than Herman Goering has medals. In fact, a method will shortly be disclosed whereby one astronomer of my acquaintance says he can get the distance of a star by no more complicated process than *looking* at it.

When astronomers begin to lecture on the general subject of HOW FAR AWAY IS THAT STAR AND HOW DO YOU KNOW? they inevitably begin to talk about base lines and angles, with a lantern slide of two boys squinting at a tree on the other side of a river. All the time they are lecturing they are perfectly well aware there are

only a mere handful of stars, not two thousand at the most, which are close enough to allow their parallaxes to be measured with any degree of accuracy. They also fail to mention that a good many of these with parallaxes which by courtesy are said to be known, really have negative parallaxes. Which if taken literally would put them somewhere on the other side of minus infinity.

If we are going to get at the stars beyond the tiny shell bounded by those with trigometric parallaxes, we must invoke the aid of some much higher powered principle. As we shall see, we use the two thousand trigometric parallax stars as a springboard for getting at the others at vastly greater distances—to the extragalactic nebulae, in fact.

Another trade secret which might as well be told now as later, is that the distance of a star in itself is usually of rather minor interest in astronomy. The situation of a star with respect to Earth can hardly be of much significance in the ultimate scheme of things. The news that the Rigel is sixty-two times farther from Earth than Sirius is not likely to become a source of bitter discontent between inhabitants of the two systems. But this information does tell astronomers here on Earth that there is a fundamental difference between Rigel and Sirius. As we see them in the sky, Sirius looks only a little brighter than Rigel. But it does not take Professor Einstein to demonstrate that if Rigel were moved in toward Earth up to the distance of Sirius, then it would be by far the most brilliant star in the sky. If Rigel and Sirius were both viewed from the same distance, Rigel would outshine Sirius six hundred seventy-five times.

This is the real reason why so much time is chalked up against parallax work. It is not because astronomers really care a rap how long it would take to travel to omicron-2-Eridani at the very reasonable rate of a cent a mile as they would have us believe. It is because they want to know how intrinsically bright the star is or its *absolute magnitude,* the magnitude a star would have seen from a distance of ten parsecs. For when we know the absolute magnitude of a star we know something genuinely important about it. For then we can see how its light output, or wattage, or horsepower, or what you will, compares with other stars. If the gift of unlimited cosmic control were bestowed upon an astronomer, as it was upon the man in H. G. Wells' tale of *"The Man Who Could Work Miracles,"* after first settling a few personal problems, his next step would probably be to move all the most interesting stars into ten parsecs so he could get their absolute magnitudes directly without having to bother with measuring their distance. For that is really what he is doing by the slow painstaking parallax method.

If a thousand stars gathered at random were classified according to their color and absolute magnitude, they would be found to fall into two

fairly definite groups. One consisting of exceedingly luminous stars—the giants—which run through all colors from red, orange, yellow, and blue-white, with the reds slightly brighter than the blue-whites. And a group of fainter stars—the dwarfs—which also run through all colors from red to blue-white, but with the reds very much fainter than the blue-whites. When a plot is made of color against true brightness, the diagram resembles a figure 7 reversed, the giants forming the upper horizontal stroke and the dwarfs the downward stem part. Figure 3.

This is the celebrated "Russell Diagram" first plotted by Professor Henry Norris Russell of Princeton in 1913, which has probably been of more value in the study of stellar evolution than any other one diagram in astrophysics. A dozen articles could be written about the significance of this or that feature of the diagram. What concerns us here, however, is not whether the stars are marching up or down the

Fig. 6. Moestlin had good eyes; telescopes hadn't been invented when he made this naked-eye observation chart. Can you match his eyesight?

figure 7, or what to do with the isolationist white dwarfs in the lower left-hand corner, but the fact that the Russell diagram holds good not just for the few stars whose parallaxes can be measured directly, but for all stars anywhere, any time. If we scooped up a thousand stars from the southern sky in Crux, plotted their color against their absolute brightness, we would get a Russell diagram. If we scooped up another thousand from the Great Bear and treated them in the same way, they would obediently arrange themselves into a Russell diagram practically indistinguishable from the other.

Is the light beginning to dawn now? Suppose we take our Russell diagram formed from the two thousand precious stars close enough to have their distance measured by triangulation. We assume that this diagram holds for all stars wherever we find them in the sky. Then providing we know the color of a star we have a means of getting its absolute magnitude—and thence its distance if desired—regardless of how remote the star may be. Of course, by "color" we do not mean just whether it is orange, yellow, blue, et cetera; there is a way of evaluating this quality of a star with all necessary precision, but for us color is good enough. Also from details in the appearance of certain lines in the star's spectrum an expert can decide whether a star is a giant or dwarf; that is, whether a yellow star belongs in the top part among the giants or down below among the dwarfs.

Thus by fitting a star into its proper place in the diagram according to its color and whether it is giant or dwarf—things that are easy to get—we can then read off its absolute magnitude—which otherwise is very hard to get. (For a detailed explanation and example of how to get the distance of a star by this method see Note 2 at end of paper.)

About a thousand words ago we said there was a way to find the distance of a star by looking at it. We hope the magician's union will not expel us for disclosing the trick. It only works on the red stars at the upper and lower right-hand side of the diagram.

The astronomer who told it to me claimed that from long years of peering through telescopes he had learned how to tell a red giant from a red dwarf by their appearance. Remember that brightness alone is no criterion. Although giants are thousands of times more luminous than dwarfs, a dwarf might be a thousand times closer than a giant.

But this astronomer claims there is a difference in the quality of their light. A red giant is a lively, sparkling, vivid red. A red dwarf is a dull, dead, brick-colored shade.

Now as soon as a red star is classified as giant or dwarf we can fit in onto the Russell diagram. From its position there its absolute magnitude can be read off the scale on the side. The apparent brightness of the star as it looks to us in the

sky is always known from some catalogue. A few seconds manipulation with a slide rule gives its distance to a fraction of a light-year.

Confidentially, this trick is not so easy as sawing a woman in two or vanishing a bowl of goldfish. Chief trouble is that the stars of known trigometric parallax do not trace out a nice sharp reversed *7*, but are so widely scattered the figure is more in the nature of broad bands. This naturally makes considerable uncertainty as to where the star fits on the diagram with a corresponding uncertainty in reading off its absolute magnitude. But even this crude method will give a result of the right order of magnitude, which is doing pretty well, at that.

When we classify the Pleiades according to color and brightness, the result is not exactly what you might be prepared to expect. The stars fall into their respective places tracing out a beautiful Russell diagram —except that the upper horizontal stroke of the reversed *7* is missing. There are no red and yellow giants in the Pleiades. What this signifies nobody at present can say. It looks as if evolution had not proceeded in the Pleiades along the same lines as in the galaxy as a whole.

By making the apparent magnitudes of the stars on the downward stroke of the reversed *7* agree with those on the standard Russell diagram, we get a relation from which the distance of the cluster can be calculated. It comes out about four hundred light-years. Two other indirect methods give values in tolerably good agreement which is encouraging if not conclussive.

Once the distance is known we can form a picture of what kind of a figure the Pleiades cut in space.

The cluster consists of possibly two thousand stars scattered within a sphere forty light-years across. The stars are not noticeably concentrated toward the center but are rather evenly distributed throughout. The brightest stars are the six, seven, or eleven you counted with your naked eye. In other words, the stars that look the brightest in the cluster really are the brightest. This is so obvious that you might overlook the fact at first. But since the stars in a *cluster* are all virtually the same distance away, then their apparent brightness must correspond exactly with their absolute brightness. The six visible Pleiades at the center are brilliant blue-white giants. But most of the two thousand others are ordinary red and yellow dwarfs like our sun that fill up the ranks of privates in the vast army of the galaxy.

Seen from a planet revolving around Alcyone, the heavens would be filled with dozens of blazing white stars brighter than Venus, with hundreds more as bright as Sirius and Vega. But nowhere would you see a star like Capella or old Betelgeuse. Oh, naturally some little red dwarf might loom up big because it happened to be a next door neighbor. But of real honest-to-good-

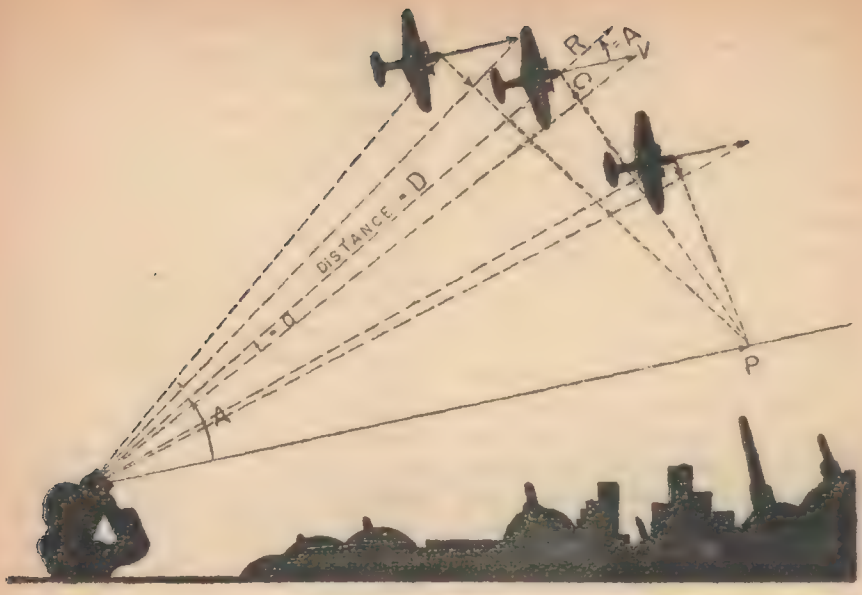

Fig. 7. One way to calculate stellar distances. See Note 1.

ness colored giants there would be none.

The most amazing thing about these bright stars is that they wouldn't really look like points of light at all. Instead they would be more like big frosted globes shining through a dense fog. To the naked eye and through a large telescope the Pleiades look like any other white stars. But to a photographic plate after an hour they begin to look fuzzy around the edges and after another couple of hours the stars become nearly lost in a bed of soft fine nebulosity. The whole region is seen to be choked with masses of white cloud stretching from star to star. In this sense, the Seven Sisters are in real physical contact with each other.

Comparison of the Pleiades with frosted light globes surrounded by dense fog is not so farfetched, for it turns out that this represents the real situation very closely. Measurement made at the Lowell Observatory have shown that the color of the clouds is the same as that of the stars, showing that the clouds shine directly by reflected light. The nebulosity is illuminated by the stars and reflects the light off into space

much as a low fog is illuminated by city lights and reflects the glow back to Earth again.

But these clouds that show so strongly around the central Pleiades are the merest fragments of the whole nebulosity. For photographs properly exposed reveal the presence of a nebula enormous beyond all belief in this region spreading over an area of one hundred square degrees. Barnard detected it first while sweeping for comets over fifty years ago. He was aware of a general dulling of the stars and from fleeting impressions of vast nebulosities and intricate condensations entwined among the stars. A dozen years later he had the satisfaction of verifying his visual impressions by photography. And this was the same observer who was never able to see the canals of Mars!

The existence of nebulous streamers stretching among the stars opens up unexplored vistas to the imagination. Perhaps there is a strand connecting us with the Pleiades—a cosmic link with the Seven Sisters.

Speaking of shoestring methods of getting stellar parallax, the fog around the Pleiades could be made to furnish a measure of their distance if only the stars in the cluster weren't so infernally constant. I suppose to be consistent the Seven Sisters should show a lot of variation in luminosity. What we need is for one of the bright stars to cut a few capers—get an acute attack of gastritis or blow its top off or do almost anything to start a series of rapid upheavals in brightness.

As these light flashes traveled outward, the nebula instead of being uniformly illuminated as at present would exhibit a ribbed structure, a stars-and-stripes effect, as it were. Knowing the time between flashes and the velocity of light we would only need to measure the angle between light and dark spaces to get the distance. The same method has been applied to the expanding shell around novae with good results.

The question may be seriously raised as to whether there are any planetary systems in the Pleiades. Whether a planet even if started revolving around Alcyone could long endure.

One of the most engrossing problems for theoretical astronomers of the last century was keeping track of Encke's comet. This pesky little body dodged in and out of its orbit and backtracked in a way that had the mathematicians hanging on at the bell. From 1819 when Encke took over the job until Backlund finally got the situation under control about 1908, the comet was way ahead on points. Worst trouble was that the comet did not deviate from its predicted path gradually by degrees, but suddenly, almost by jerks. In one case in particlar, that of May, 1869, the comet abruptly slowed down until computers were reduced to the pitiful expediency of blaming the trouble onto a collision with an unknown asteroid. Diana was found lurking in the neighborhood six million miles away, but she alone could only pull enough weight to account for one percent of the discrepancy.

So far as I know, the mystery remains unexplained to this day.

The theory about Encke's comet that became famous was that of the "resisting medium" which was conveniently assumed to exist within the confines of Mercury's orbit where it would do the most good in helping the mathematicians. Looking back now it seems curious that a theory so unsuccessful as the resisting medium could become so widely known. It was abandoned long ago after a few abortive attempts to revive the idea. Perhaps the reason was because the theory of a resisting medium can be handled so nicely by differential equations. It furnished the astronomers with such a beautiful example for their textbooks. (The tie-up with the Pleiades will come in just a minute).

A resisting medium will alter the orbit of a planet in two ways. First, by making it less elongated. A comet with an orbit like Halley's roughly resembling a banana will be molded into a circle. Second—and more important—a resisting medium has the paradoxical effect of speeding the planet up by crowding it in toward the sun. If such a force acts on a planet long enough, the unfortunate body has no other choice than to spiral inward toward the sun at an ever increasing pace to an ultimate fiery death.

Aside from the spasmodic behavior of Encke's comet there has never been the least reason for suspecting the presence of a resisting medium in the solar system. But we do know that surrounding the Pleiades is material sufficiently dense to register strongly on our photographic plates. How much resistance it would offer to a planet's motion we cannot even guess. No doubt the nebulosity is excessively tenuous material, thinner than the space of our best vacuums. But the trouble is that it has ten-to-the-tenth year to exert its deadly effect. Beautiful stuff seen from four hundred light-years. But a shroud for any hapless planet entangled within its web.

In ancient times the rising of the Pleiades was a sign reminding priests and astrologers of old sacrifices and ceremonies. Today the Pleiades remind down-to-earth astronomers principally of certain features of the lunar theory. If you consider a single star in the cluster as a satellite, the whole cluster as a planet, and the central galactic nucleus as the sun, then the formulas already worked out for the moon can be applied bodily to the Pleiades, or similar open cluster.

The most interesting end product of these investigations is determining whether a cluster is "safe"; that is, how long it can hold out against the forces ceaselessly working to destroy it.

Here again a moving cluster like the Pleiades might again be aptly compared with a formation of bombers spearheading into enemy territory.

From below the formation is battered by continual antiaircraft fire. (In a moving cluster the stars are subject to the continual pull of the

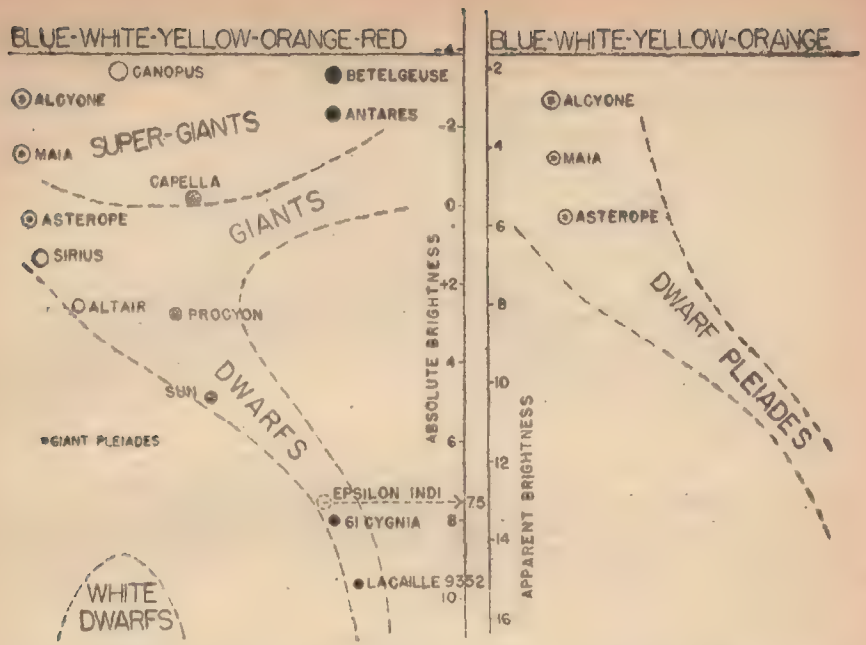

Fig. 8. The Russell Diagram, at left, is typical of all stars; the Pleiades, for reasons unknown, show the abbreviated diagram at right.

central galactic nucleus). Exploding shells rip the formation from all sides. (Tidal forces try to shear the cluster apart). Fighter planes come diving through the formation compelling the bombers to give ground. (The cluster traveling through space encounters alien field stars in its path. These act like cosmic Fifth Columnists, loosening the cluster up, weakening it, so that a succession of such stars boring from within eventually demoralize the members to such an extent that the powerful general galactic field prevails over the cluster's weak defenses.

No apprehension need be felt for the immediate safety of the Pleiades but the day will come when the sisters will be scattered far and wide. According to calculations by Dr. Bok of Harvard, 10,000 million years hence the Pleiades will have loosened up or expanded until they are a third larger than at present. After 10,000 million years more the cluster will have doubled in size. It will still be sufficiently stable, however, to last for another 5,000 mil-

lion years. But now the twilight of the Pleiades is rapidly closing in. For the end of the next 5,000 million years finds the Pleiades a shambles, the destruction of the group complete.

And then Alcyone, Asterope, Maia, Electra, Celoeno, Merope, Taygeteo, and Atlas—can some expert on mythology explain how Atlas got himself mixed up with the Seven Sisters?—will no longer exist as a unit, their weak feminine bonds broken by forces too strong for them to resist.

NOTES

For the benefit of mathematically minded readers who are not satisfied with general explanations, the following may be of interest.

1. *Distance from Moving Clusters.* Fig. 2. The quantity which ordinarily is very difficult—or impossible—to get is the angle A, between the direction the planes are moving and their direction in the sky. It is the peculiar circumstance that in the case of a moving cluster this angle can be determined, in theory at least.

In addition to A, the observer must know the speed with which the objects are moving directly toward or away, represented by the arrow, R. For a star cluster this is easily found from the Doppler shift of lines in the stars' spectra. Also, the angle, a, through which the object *apparently* moves across the line of sight must be determined. For a star, this can only be found by comparison of images on plates taken at intervals of ten years or more.

But once the angles, A and a, and the speed, R, are available the rest is easy. If C is the speed across the line of sight and D the distance, then $C = R \tan A$. From which the distance is given in angular measure by, $D = C/a$.

In textbooks this is usually expressed in a slightly different form of p(parallax) $= 4.74\ a/V \sin A$

The reader is warned that if he tries to draw a diagram to scale it will not work out correctly. This is because the moving objects should be at a great distance away and their motion projected against the sky. In making Fig. 2 it was necessary to follow the same system used in motion picture studios when filming a scene somewhat differently from the way it is strictly meant to be, by "cheating a little for the camera." Well, I had to "cheat a little" in drawing Fig. 2.

2. As an example of how to get the distance of a star from its color and classification as giant or dwarf, let us try our luck with *epsilon Indi*.

Through the telescope we see it has a dull brick colored shade of red, although not quite so deep a red as Antares or 61 Cygni A. It is, therefore, a dwarf of a dark orange tint. We put it on the diagram a little above 61 Cygni A and slightly to the left.

Its absolute magnitude, M, read off the scale to the right is 7.5. The apparent magnitude, m, of *epsilon Indi* according to a catalogue is 4.7.

The formula for the parallax in seconds of arc is

$$\log p'' = (M - m - 5)/5 = (7.5 - 4.7 - 5)/5 = -0.45$$

or as logarithms are more commonly expressed, 9.5500 — 10.

This gives, $p = 0.36''$, corresponding to a distance of 2.8 parsecs or 9.1 light-years.

The accepted value for the parallax of *epsilon Indi* is $0.288''$, which corresponds to a distance of 3.47 parsecs or 11.3 light-years, an error of about nineteen percent.

THE END.

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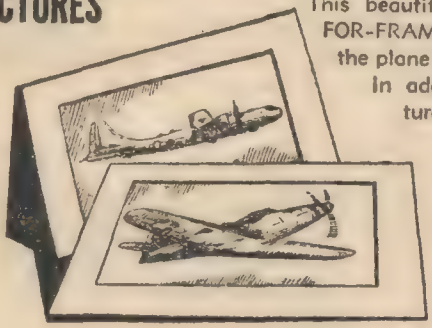

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Brass Tacks

And several others spotted it.

Dear Mr. Campbell:

In the story "Beam Pirate" a beam is said to have the speed C^2 where C is the speed of light. This is saying practically nothing at all. If the units chosen to express this speed are metric, i.e. $C = 3 \times 10^{10}$ cm/sec, then the speed of the above beam is 9×10^{20} cm/sec. However, if the units are English measure, i.e. $C = 1.86 \times 10^5$ mi/sec, then the speed of the beam would be 3.46×10^{10} mi/sec $= 5.58 \times 10^{15}$ cm/sec. Thus the speed of the beam would depend on the units chosen to express the speed of light. This is summed up by saying that C^2 does not have the proper dimensions for a speed.—Lawrence Markus.

"Bit of Tapestry" was by Cleve Cartwill.

Dear Sir:

I am glad that this, my first letter to Astounding, is one of praise. For several years I have felt the late, lamented *Unknown* to be superior in literary quality to Astounding but after reading the November issue my opinion, if not reversed, has at least been modified so that I now place these two fine magazines on the same level. At present, Astounding has everything, except its slightly blatant title, to recommend it to the reading public.

The best story in the issue was "Killdozer," by Sturgeon, one of the few that have lived up to their advance notices. I seem to remember Sturgeon's employing that italicized preface device in a swell story called "A Bit of Tapestry" in *Unknown*. It is very effective and keeps the main narrative from being cluttered up with flash-back explanations.

The article was a masterpiece of lucidity—Richardson is, of course, one of your most valuable assets.

I liked "When The Bough Breaks" and "Alien Envoy" equally well, the former for its characterization, the latter for its development and theme.

"Desertion" came next, I thought, and then "The Harmonizer" and "Redevelopment." These last two did not quite meet the standards of the others but were, nevertheless, digestible.

Although the present binding and layout are pretty good under the circumstances, I shall welcome back the former large size, if and when.

You will hear from me again in the future and, in the meantime, I shall do my best to get Astounding more readers which will be a good turn all around.—Henry Hirsch, 201 Hamilton Avenue, Staten Island 1, New York.

Time Duration vs Intensity? Seems to make sense.

Dear Sirs:

With reference to "Case of Apparent Time Acceleration," by R. S. Richardson, in the October, 1944 issue of Astounding, I would like to make a few variations in his line of reasoning.

Time consists of Duration and Intensity. Intensity determines the velocity of duration. This would account for people aging in a very short time. You hear frequently of someone whose hair turned white in a short while. You see many examples of aging in a short time now that there is a war on. Increasing the intensity of time would accelerate the normal results of duration. This is in line with Dr. Nitardy's theory because he asserts that the speed of duration increases in proportion to the time experience. This line of reasoning omits the effects of intensity. A large number of the persons who attain great age are very simple folk who have not had a varied existence, and therefore have assimilated a smaller quantity of experiences. This could indicate that life acts as a storage battery of varied capacity in each individual. As experiences are assimilated, the charge builds up to where the capacity is filled. Then the final experience death, completes the cycle, that is, if death is an experience instead of a cessation of experience. In insane asylums, individuals can be found who went insane when very young, and after thirty or forty years as inmates. their appearance and actions have not changed materially. This is not only true of juveniles, but also older persons. One woman entered the asylum at the approximate age of forty and thirty-five years later she still appears to be forty. Insane and feebleminded persons seem to be able to live to a ripe old age. Possibly in living for each new experience, forgetting it when it is past, and not accumulating experiences, they have pointed a way to increasing human longevity. However it is possible that just their lack of realization of the passage of time accounts for their longevity.

So far duration of experience as versus intensity of experience hasn't been touched upon; also the effect of the emotion in controlling intensity. The increasing tendency toward specialization in all walks of life may have been responsible for our expanding age expectancy. Variation of experience can be sacri-

ficed to make way for more intensity of experience. By limiting the variation and controlling the intensity of experience, further advance along specific lines could be made, and life could be prolonged.

The whole trend of my thought tends to indicate that intensity rather than duration is the important factor in creating age reactions. Also it would seem that the intensity can be influenced by variability and by the emotion in which the experience is approached. Since emotional control of intensity and selection of variability are both capable of being worked out, it would seem that Richardson's travel into the future might some day be made possible by prolonged age. The whole point proves but one thing. Time is a purely relative concept, which is only serving until something more useful takes its place.—Roger W. Otto.

Sorry—the idea won't work. Such expelled matter, like bullets shot straight up, would fall straight back—or escape to infinity. The matter would have radial, but no orbital velocity to speak of.

Dear Mr. Campbell:

The article on "Extra-Solar Planets," by R. S. Richardson, in your September issue, is quite interesting.

It is stated that no theory has been found that explains the origin of the solar system. Since it has been discovered that our system is not unique but that solar systems are the rule rather than the exception, we more than ever need an explanation as to their cause or origin.

There is evidence that the planets were formed systematically and rhythmically by some process that was not a freak but something that acted again and again in the same way. It must be a universal phenomenon since many of the stars have planets probably formed by the action of the same forces. Probably the process is still going on in the Galaxy.

It seems to me that there is one quite common occurrence in this and other galaxies that could do the trick. Novae. Hot suns have unstable atoms in their atmospheres and in the case of the observed novae they break down and explode, blowing off a shell of matter that has a velocity outward exceeding the velocity of escape.

Is it not probable that such explosions on *a lesser scale* are quite common? Suppose a star during its younger and hotter days "blows its top" more or less regularly. The explosions are not violent enough to drive the expelled shells completely into space. Instead they go out for some distance and then fall back. What would happen?

The part of the shell directly over the star's poles would simply fall back to the star because it would have little angular momentum. This would leave a ring of matter revolving with the same velocity that it had as a part of the star's atmosphere, less whatever losses there would be due to crosscurrents and other irregularities in the explosion.

The ring of matter is very irregular as to mass and velocity of its various segments. It is not moving fast enough to maintain its distance, so it shrinks and falls, gaining velocity as it does so until an orbit is established. Differences in velocity cause it to gather in a ball. Repeat several times and there is your Solar System—John B. Platts, Wallace, Idaho.

I guess maybe G. O. Smith slipped a cog.

Dear Mr. Campbell:

Thanks to a long train ride several years ago I am now one of Astounding's ardent admirers. Many times I have meant to write, especially after procuring the old issues of "Slan," and this represents the culmination of all those efforts. The ratings follow.

1. "Beam Pirate." Smith has a way of making his highly technical terms seem not too abstruse that is very encouraging for the reader. When I can say to myself "Well, I understand the basic principles of that—it's too bad metal X hasn't been found on Earth," I feel much better. There was one thing that bothered me, though. It has hardly anything to do with the quality of the story, but I thought you might enlighten me. In the story Walt Franks says that the solar beam propagates at a rate of C^2 i.e. thirty-five billion miles per second. I will not dispute the ability of a radically new beam to go that fast, but I wanted to know just why C^2 equals thirty-five billion. Granted that the figure 186,272 squared is approximately 35,000,000,000, but why does he square 186,000? What if somebody used the speed of light as a unit? Numerically C^2 would also equal the speed of light. If our mile were *twice* as long as it is, the *value* of C^2 would be *one half* that given. With linear measurements such methods are O. Q. If we measure a mile in feet and square, we get 27,878,400 square feet or one square mile, but if we applied that to C^2 we would get an *acceleration* of thirty-five billion *square miles*/sec^2. This doesn't seem quite right. If you ask me, the value of Franks' figure is 186,000 times the velocity of light and nothing else. If such things are explicable, I would appreciate a word on the subject.

2. "Renaissance". The only weak part was the sudden conversion of Elta without cause. It seems that the author could think of no solution.

3. "Kindness". A welcome and interesting version of the superman. Glad it wasn't spoiled by an attempt to explain them more. I liked especially the finishing sentiments which gave them the final touch of omniscience. Tie for second.

4. "Blind Man's Buff" left us in the dark about a few things like where the Venusians had so obviously gone, but was good on the whole.

5. "The Case of Jack Freysling". This sounds like something from *Unknown*. A little relaxation from the realm of the future is all right by me.

6. "The Wedge". Nothing really bad about it, but it lacks drive.

Some more articles on astronavigation or science would be more fitting but I guess we can forgive the author of "Rockets".—Lyon McCandless, Jr.

Justice cannot be mathematical. Natural law is exact, but not just! Molten lead burns the inexperienced child or the careless workman. "Co-operatives" would be lower, not higher.

Dear Mr. Campbell:

Lester del Rey's tale "Kindness" interested me and has led me to a little speculation on Del Rey's proposed changes in the human race.

Man, as we claim to know him today, is termed "a reasoning creature". He, as a rule, figures things out step by step; he is naturally individualistic, though that is sometimes overruled by various dominating powers. Man is selfish to some degree, and often a devilish element is in his make up.

"Kindness" suggests homo intelligens who have the uncanny gift for reaching the right conclusion without having to bother about thinking it out. This race realizes that the race's well being is their well being, so in their make up is a predominate evidence of consideration for their fellow men. Del Rey called it "Kindness."

May I carry this line of thought to its next stage and say that the homo intelligens would be replaced by homo-co-operatives. It would be a race that would automatically deduct the answer to the introduction of any factor into the course of their world's history. In such a race kindness could not well survive, rather I would expect things to be done by a matter of precise mathematical justice. A matter of justice to the advantage of the race as a whole and despite the fate of any contrary individual constituents. That I would consider to be the ultimate for co-operation.

As to the final outcome of such a future for man, I have my ideas, but first I'd like to hear someone else's, for the sake of a friendly argument and the chance to learn something more. Will someone please call my bet?—Rosco E. Wright.

Highly interesting idea! At what age-level does a group of Hitler Youths become unsalvageable?

Dear Mr. Campbell:

After reading the short article by R. S. Richardson, "Case of Apparent Time Acceleration," in the October issue of Astounding, it occurred to me that there is a valuable lesson to be learned by extension of the thought developed by Dr. Nitardy.

According to Dr. Nitardy, time appears to accelerate as the individual grows older due to the fact that any given period or "quantity" of absolute time becomes smaller with respect to the total time experiences of the individual. This is very logical and very true to experience.

However, I feel that there is an important extension possible to this thought.

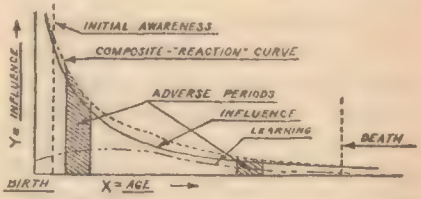
Experiences or happenings in the life of an individual seem to have a degree of influence according to much the same psychological law as suggested by Dr. Nitardy. A small child having a limited range of experience will find himself deeply influenced by experiences largely because each new experience is not too small with respect to his sum total of experience. It, therefore, looks as though there is a sound basis for the idea that great care should be taken in training the minds of young children. Witness the spectacle of the youth of Germany.

It would be very easy to write an equation showing the point in life where a youth trained in evil ways would be essentially beyond recovery. I do not imply that such an equation could be applied to any given individual. It could, however, be applied to groups in the same manner as insurance concerns apply their equations.

As a starter I would suggest the following. Let the behavior pattern of an individual at any given instant be the sum of past experiences each multiplied by an "influence" factor as given by the individual's age at the time. In broad terms, the problem reduces to taking the *area integral* under the parabolic curve $X = 1/Y$ with appropriate limits to establish the period of awareness of the individual. This area integral represents the *total* behavior pattern of the individual for his entire life.

The actual shape of the curve would possibly be distorted from the simple hyperbola suggested since we should consider the "learning" curve which indicates a peak of learning receptiveness at the age of about twenty.

Adverse influences during early life are evidently more difficult to compensate for than influences of equivalent duration in later life.



Maybe after all we can take the old saying "You can't teach an old dog new tricks" and prove it mathematically.

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This suggestion ignores certain factors such as the quality of change in the mind of an individual as he grows older. We may find in this very change the exception to the rule that saves the day. Admittedly it would, in general, be harder for one to learn something new a year from now than it would at present. But what if one had spent the year in training one's mind in receptiveness?

For many years I have been working privately on research projects designed to better the condition of mankind. The suggestion offered by Dr. Nitardy interests me because it points a way toward a practical analysis of the ills of mankind and possibly toward a means for counteracting those ills.—James R. Alburger, Research Physicist, 1654 Rodney Drive, Hollywood 27, California.

I showed George Smith those letters. He claims—

Dear John W.:

I notice a growing furore on the part of certain readers which threatens to become a tempest in a teapot. These people obviously have not the acumen to understand an abstract concept like the velocity of light squared, and to avert a storm that may well become one of the most controversial subjects to hit Brass Tacks, I feel compelled to come to the front for my friends Channing and Franks, since they are not here to defend themselves.

Effects and physical constants are all interlocked. It is quite possible to express the number of B. T. U. in a horsepower, or to express the energy stored in a permanent magnet in terms of the ampere turns in an electromagnet so that equal field-strength in each is the result. Energy may be expressed in grams, and so forth. The characteristic impedance of space to electromagnetic waves is calculable and the answer is used daily. To quote an example, take the latter case.

The dielectric constant of space is: $\frac{1}{36\pi} \times 10^{-9}$ or

$$.885 \times 10^{-12} \text{ Farads/Meter}$$

The permeability of space is: $4\pi \times 10^{-7}$ or 1.256×10^{-6} Henries/Meter

The formula for the characteristic impedance of any medium is:

$$\mathcal{Z} = \sqrt{\frac{\mu}{\varepsilon}} = \sqrt{\frac{e}{c}} = \sqrt{\frac{1.256 \times 10^{-6}}{\frac{1}{36\pi} \times 10^{-7}}}$$

And simple arithmetic brings the following: $\mathcal{Z} = 377$ Ohms.

Now it is interesting that omega, or the $2\pi f$ factor used in electromagnetic equations for sixty cycles per second comes out numerically 377 Ohms.

This is sheer coincidence, there is no connection between the two in spite of the numerical similarity.

In casting about for a factor, however, the measured velocity of the wave-form discovered on Venus Equilateral was found to be almost identical with the square of 186,274, which is the velocity of light in miles per second. It is easy to make this type of error, and initially this concept was used on Venus Equilateral until our competitor's legal light,

Mark Kingman, did us a service by pointing out the error and thus saved the patent applications from being disallowed because of technical error. This fact is brought out in a story now awaiting publication.

On the other hand, I might as well admit that George O. Smith flubbed a beauty. Confidentially, my face is cerise!

I wonder how my friend Wesley Long is going to explain C^e?—George O. Smith

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—and then of course, Wes Long had to see Smith's remarks!

Dear Mr. Campbell:

The last time George O. Smith was in Cincinnati, he mentioned the fact that the square of the speed of light was a premise based on nothing. Upon giving the matter thought, it seems to me that he has his wave running on an expanding, rectangular pattern which is what C^2 might bring to mind.

When the idea of super-speed came up, he mentioned C^2 as a nice velocity, and also mentioned the fact that things are pretty well tied in together as far as physical constants go. I thought up that velocity of light raised to the 2.71828 . . . th power as a topper, both on velocity and physical tie-in.

George O. Smith got me into this thing in the first place, but now he can wriggle out by stating that Channing was searching for a tie-up and accepted a false numerical coincidence. But what is John McBride going to do? In "Latent Image," recall, he told Hammond that the velocity of propagation of gravitic effects had been measured for years and was, definitely, $C^{2.71828\ldots}$ McBride can't plead ignorance, he *knew* it!

Well, Venus Equilateral & Co. has, I believe, run up some sort of a record for being the longest series of stories on a single frame of reference. Correct me if I am wrong. But now it looks as though both Venus Equilateral and the Plutonian Lens is going to fall apart in a welter of equations, false premises, and errata. Meanwhile, I am polishing up my double-barreled shotgun and the next time I get to New York, I shall call upon George O. for leading me astray. Well, misery loves company—Wesley Long

---

BOMBS — make Jappy unhappy.

BALMS — make Yanks happy.

BONDS — buy both — **if you buy bonds!**

NOMAD

(*Continued from page 98*)

Guy worried. Elanane might not have made that move.

If I move my protector, he should fall into the trap by capturing it. He always does.

Guy decided that this game was no fun at all, and took the piece. Charalas smiled brightly and removed three of Guy's major pieces with a single move. Guy countered by making the one move that Charalas did not want, and the Ertinian lost the piece that he was hoping to save. The rest was quick. Charalas moved and Guy countered, but Charalas triumphed because Guy didn't know enough to set up his own traps. He could avoid Charalas' traps, but in simple exchanges he lost ground, and finally Charalas removed the last white piece from the board.

The neuro-surgeon smiled tolerantly. "You may be lanee, Elanane, but I am still your master at toran."

"I'll learn some day," promised Guy.

"You seemed preoccupied," said Charalas. "You've been worrying."

"That's possible."

"About Sol, I'd guess."

"Right."

"Why worry about them?" asked Charalas.

"They threaten our integrity."

"You mean since Thomakein informed us that the Terran, Gomanar, was forced to violate his oath?"

Guy blinked. To treat this properly, he would have to absolutely divorce himself from his personality and treat the Terran as another entity. "Yes," he said. "The Terrans, according to Thomakein, are more than capable of setting up a detector that will detect the presence of the light-shield."

"We'll cross that bridge when it comes."

"We should look forward to it—and plan."

"Elanane," said Charalas, "my loyalty has never been questioned. For a moment, I'd like to discuss this as an impartial observer."

"Of course."

"Ertene is stale."

"Stale?" asked Guy in astonishment.

"Ertene has lost the pathway that leads to the apex," said Charalas. "We have become soft and stale."

"I don't understand."

"When mankind came to Ertene, he was a soft, inefficient creature. Nature had tried size, force, quantity, physical adaptability, and a score of other concepts before she tried brains. Mankind was nature's experiment with brains as a means of survival. We are a weakling race, Elanane. Unarmed, we are no match for any of the beasts of the jungle. Dropped into the depths of uncivilization—naked and alone—what happens?"

"We die."

"No we do not. Within fifteen minutes we are armed with a stone bound to a treelimb. Then we are the match for anything that lives. Within a day, we are supreme in our jungleland. Our home is in a tree. Snares are set for food animals,

death traps are set for carnivores, and the jungle is cleared for our safety. And, Elanane, from that time on the beasts of the jungle avoid us. We, the weakling creature, are to be feared mortally."

"Granted, but what has that to do with the present?"

"Mankind fought the jungle to supremacy. Mankind fought beasts, the cannibals, and nature herself. He pushed himself upward by walking on the heads of those below him. Then he fought with himself, since there was nothing left that was worthy of his mettle. He fought himself because he could gain no more by fighting lesser things."

"What may we gain by fighting among ourselves?" asked Guy.

"The right way to live," said Charalas thoughtfully. "Consider, Elanane, the extremes of government. No matter what you call them, they are absolute anarchy and absolute tyranny, and between these two lie every other form of government. Obviously complete anarchy is impossible at the present level of human nature. Equally obvious is the impossibility of absolute tyranny in a culture based upon ambition and education. But, Elanane, somewhere between these extremes is the best system."

"Can fighting find it?" asked Guy doubtfully.

"It is the only way. Consider an hypothetical planet containing two continents of equal size, on opposite hemispheres. One continent is absolute anarchy, the other complete tyranny." Charalas grinned boyishly for all of his years. "Obviously they have been living in complete ignorance of one another up to now, for otherwise they couldn't have arrived at those extremes.

"Well, it is hypothetical, anyway, and there are your constants. This goes on, and then one day one of two things happen. Either is possible and I am not plumping for either side—but the two possibilities are: One, the tyrant decides to gather the anarchs under his rule, or; two: the anarchs decide to free their fellows from the tyrant rule. This, Elanane, means war, to quote an ancient cry.

"Immediately the tyrant finds that he cannot run the whole show by himself, so he relegates power to able men. The anarchs decide that they are impotent, and elect leaders to run certain phases of the campaign. So we have less of a tyranny on one side and less anarchy on the other. In either case, power relegated is seldom regained, and as the years bear on, war after war is fought and either side approaches a norm."

Guy smiled. "Supposing one side wins."

"That is a sign that the winning side is closer to the best form of social co-operation."

"And when they reach that norm, then what?"

"They never reach," said Charalas. "Their struggles cause each of them to rise above the norm, and then they swing like the pendulum below the norm. It is a long, damped cycle."

"A damped cycle must eventually cease."

"Not when you constantly change the norm," said Charalas. "The norm of prehistoric times is vastly different from the present. Our norm is different than the future norm. Men advance in knowledge and in responsibility, and they resent, bitterly, being judged on laws and rules set up to control their forefathers. City Indilee was the object of ridicule some hundred kilodays ago because some jurist tried to invoke a rule against flying less than five thousand noads above the city."

"I've read about that," smiled Guy, reading it from Charalas' mind. "At the time, we'd been landing on the building stages for thirty kilodays."

"Right. Another thing, Elanane. Some day anarchy will be the government of man. But not until man has learned to control himself as an individual, to respect the rights of others, and to follow the common wish. Until then we will have government."

"Which brings us back to the original question. You said Ertene is stale."

"I mean it. Elanane—are we capable of running ourselves?"

"Obviously."

"Then we shouldn't fear a test of fire."

"Our ability to keep out of the fight should be answer enough."

"Any coward can keep from fighting by hiding. Perhaps these Terrans are right."

"Right? Is it right to destroy the people of Pluto with their way of living in comfort?"

"Yes. We do not mind killing cattle for food, do we?"

"Yes, but—"

"No, Elanane, it is no different."

"Then how about the ones used by the Terrans for medical experiments?"

"Justified. Up to a certain point a race may experiment to good advantage on the lower primates. Eventually, there is little to be known, since the more delicate investigations must be carried out on higher levels of intelligence."

"These denizens of the outer moon of one of their planets were not of high intelligence."

"Wrong," said Charalas. "They are of a high order of intelligence. It is their knowledge that is low. They have the capability. Yet, Elanane, we have the fundamental law of the survival of the fittest. In warring upon Mars, weapons and sciences are unloosed which outstrip the advances made in medicine. Nothing is said against Terra for fighting against Mars. They are traditional enemies.

"To return to the denizens of Titan. These semi-intelligent natives are like swine wearing diamonds. They evolved in a society in which they had no native enemy. They were not forced to become intelligent in order to live—if they had but one single enemy, they would have evolved into first-rate civilization ages ago. There has been no forward step on Titan for ten thousand Terran years. They

will never make an advance. Even if offered the sciences of the inner system, they would shrug them off and revert back to their semi-savagery."

"I've been told that three generations of schooling would make them suitable allies for Terra," objected Guy.

Charalas shook his head. "Wrong. Mankind on Terra rose because he was ambitious—he still is. Titan is not ambitious and never will be. They have no reason to work, and will not. Terrans—and early Ertinians—fought their way upward because they had to in order to live. Therefore, Elanane, the Titanians fall under the classification of those whose lives are only to support intelligence."

"Um," said Guy. "Then Terra is not the black race they've been painted?"

"Not by a jugful. Nothing was said of downtrodden races of the past—why balk at downtrodden races of the present?"

"But they should help—"

"Helping anyone is possible only when they want to be helped. The Titanians are not even grateful for the comforts given to them by Terra."

"Comforts?" sneered Guy. "The comfort of being vivisected?"

"Terra is not a vampire race," smiled Charalas. "Terra tried to raise their level and failed because of their lassitude. They didn't give a hoot. Terra tried to conduct their experiments on a gentle basis; small experiments such as testing vaccines and antibodies—all, mind, on Titanians who were ill. They had no chance of danger, and a good chance of living. Titan had nothing to lose; either the vaccines would work and save the victim, or would not work and the victim would receive the best care possible anyway. Terra offered to pay royally. Titan didn't even care for that. They didn't care for payment; didn't care for comfort; didn't care that some of their members died.

"And," added Charalas pointedly, "they do not care now, when Terra uses a few of them for medical purposes."

"How many?"

"There are one hundred million Titanians. Terra takes perhaps one thousand per year. And a goodly portion of these are ill already. Terra developed their limb-grafting method out of them, and that alone is worth their trouble."

"That puts a new face on it," said Guy.

"As for their new find—Mephisto. Mephisto might have received good friendship. The Mephistans were absolutely alien to Terrans. Mephisto has nothing that Terra really needs, that Terra couldn't exchange for. Terra has items that Mephisto could have had, too, thus completing the cycle. Mephisto's atmosphere is unsuited for Terrans and vice versa. Their body chemistry would have been poisonous to each other. Here, then, we have a condition whereby two alien races could have lived in peace together. Yet Mephisto, not knowing the entire story, thought Terra a rapacious, vampire

race. They, the utter fools, sought Martian assistance."

"That's what I'd have done."

"Not smart," smiled Charalas. "Never, never get between traditional enemies, Elanane. You become an innocent bystander that goes down before the steam roller of a spite battle. That, plus the traditional system of both planets."

"What's that?"

"Never fight your battles on the home ground—it spoils it badly. Fight your battles all over some poor innocent's land and leave the homeland unscarred. Also dirty, Elanane, but Nature is a dirty fighter."

"So you think Terra is all right fundamentally?"

"Obviously. Nature will not permit any unsuitable system to obtain. Given a few hundred years and Terra will see eye to eye with Mars against some other system."

"Perhaps against Ertene—?"

"I hope not," said Charalas fervently. "Yet they have some attributes we need."

"Have they anything we need?"

"They have the verve, the ambition, and unbeatability of youth.

We, Elanane, are stodgy and slow and old."

"That doesn't please me too much."

"That's too bad. It's true. Look, Elanane, how long is our history compared to theirs?"

"Several hundred times as long, I believe."

"Not quite several hundred, Elanane. But long enough—far long enough to prove my statement. How does their scientific culture compare?"

"Somewhat less—"

"Equal! Or better perhaps!"

"Oh no."

"Oh yes. The two are divergent to the nth power, but their development is as high as ours is. Now, Elanane, they've come up alone, driven only by Mars and other exigencies. Mars came with them. We, Elanane, came up by slyly taking bits of culture from this system and that system as we came along.

"Be that as it may," added Charalas. "The question I ponder is this: *How do we know we're so right?*"

XVIII.

Guy didn't answer. And Charalas smiled. "I've said my piece," he told Maynard. "Take it as from an old, old, bothersome man who may be bitter because of his age."

"Charalas, you are Ertene's foremost neuro-surgeon, and also one of the most popular philosophers. I'll accept your arguments. But I am still convinced that Ertene will suffer if any alliance is formed between Terra and Ertene."

"A little suffering might wake us from our lethargy, but it is also human nature to let the other guy suffer. We'll go on and on until we get caught. Some day," promised Charalas, "Ertene will suffer. It's just a matter of time before we get caught."

"Not if I can help it," said Maynard stoutly.

The door opened to admit Thomakein. He bore a sheaf of papers. He looked surprised at Charalas and then greeted the neuro-surgeon. "Been here long?"

"Couple of hours," answered Charalas. "Elanane and I have been discussing the state of Ertene."

Thomakein's forehead wrinkled, and he cast a worried look at Guy, who smiled cheerfully. "Have you come to a conclusion?" he asked with forced cheer.

"We've decided that Ertene may be in for trouble some day," said Charalas. "And also that we'll forestall it as best we can."

"That's what I came for," said Thomakein. "We're setting up vortex projectors on strategic places. We need your signature, Elanane, on the orders which procure the land."

"Upon what basis?"

"Purchase, of course."

"I'll sign—and pray that they are never used."

"So will we all," smiled Thomakein. "But to need them and not have them would be terrible."

Guy signed the papers, and Thomakein left with Charalas. Maynard smiled inwardly as they

left. Thomakein's anxiety was so obvious; he wanted to question Charalas to see what, if anything, was said that might lead to trouble. He shrugged as the phone rang once and a girlish voice told him that she was home and could she come up to see him. The voice clicked a chord in Guy's mind, and he answered: "Come on up, Leilanane."

He wondered whether it was customary for the lanee to kiss his sister on every possible occasion; his thought-beam instrument gave him enough information to make his heart beat faster.

The days passed swiftly for Guy Maynard. Had he been the real Elanane, they would have passed slowly, for nothing of any real interest transpired. It was a humdrum life, he found. The affairs of state were few and far between, and more and more Guy came to believe that Ertene's system was as good or better than the turmoil that prevailed on Terra. The only activity that went on was the construction of the vortex machines, and that was the job of a few, specially-trained technicians. Guy found his time passing swiftly because of the constant necessity of keeping his guard up.

The thought-beam instrument kept him out of trouble, and gradually he completed it, making the special parts in a tiny workshop that the real Elanane had furnished. He thanked the dead lanee for having that kind of a hobby, and used it to the best advantage.

Leilanane helped. The affairs of state were the small part of being lanee, but the social functions were nightly. And since Lanee Elanane had no mate, nor cared to speak with intent, he appeared at the state functions with his sister. He was gently criticized for this; not as lanee, but for the fact that he prevented his sister from the company of young men of her own set. In shorter, blunter words, Guy was "spoiling her chances!"

But Leilanane did not seem to care. She was happy. Guy pondered this, and wondered whether she would have been as happy with her real brother, or whether the facts, though unknown to her mind, were not unknown to the chemistry that attracted men and women mutually.

Wondering, Guy opened the gain of his instrument one evening and looked into her mind. He wanted to know, truly, whether she preferred him, or whether her preference was but a desire to serve him. To Guy's way of thinking, there was a difference in love between love of the man and love of doing things for him.

So Guy looked and retreated blushing. For in Leilanane's mind there was confusion and frustration; she was bitter against the laws that forbade mating between blood relatives. That one experience told Guy how huge a weapon the thought-beam instrument really was, and he swore never to do that again.

It also gave him confusion. He was in no position to ponder the unanswerable question he put to himself. It evolved into a merry-

go-round that left him dizzy. In telling Leilanane the truth, he could establish a right to openly court her. But it would at once remove any possibility of remaining close to her. On the other hand not telling her kept them together—with the most formidable barrier between them.

It gave Maynard sleepless nights, and in order to keep from thinking himself into a bottomless pit, Guy started to build a thought-beam instrument of monster proportions. What he hoped to do with the instrument he did not know, but at one time he considered using it to condition Ertene into believing that it would be proper to mate him with his sister. When he analyzed the latter consideration, he scorned himself for thinking of it. He'd be throwing Ertene to the dogs for his own personal desire for a woman. And then he knew that no matter how he felt, he could not use the instrument in that manner.

It was excellent, he found, for gaining information without the giver's knowledge. But trying to coerce the individual in the slightest thing was impossible without letting the one know that mental tricks were being played.

He was forced to do some fast talking on the day he found that out, and only managed to talk himself out of trouble by calling to mind and attention the fact that he had known the man for many kilodays.

If the small one were that ticklish a proposition, the larger one would be more brutal in its operation. Yet he continued to work on the thing as a means of keeping his mind and hands busy. So night after night he worked in the little workshop, and then as he grew drowsy at his bench, Guy would stand under the stars upon the spiderweb of a footbridge that connected the governmental offices with the governmental apartments. He would look Solward and wonder how and why such a mess had been made of his life, and whether happiness would always be out of grasp.

He counted on his fingers. He'd been kidnaped, and he'd spent a year on Ertene. That was one. There was a year or so developing the barrier-screen—that made two. There were five years of advancing from senior executive to marshal's rank, and that made seven. It was a year since his being discharged from the Terran Space Patrol, and that made eight years.

Eight long years since he hadn't had a care on his mind. And in spite of his successes, there was that constant gnawing knowledge that he was not true to himself or his fellows. Yet, his conscience was clear. The knowledge had not been bad for his morale; it was merely disconcerting to know that the things they gave him credit for were not his own.

Maynard did not consider for one moment that Ertene hadn't given him everything. It took inventive genius to fit the barrier to spacecraft, and the other developments were all Maynard's own. But he scorned them all and debased himself.

It was eight long, lonely years ago—

He mentally kicked himself. He wondered whether Joan Forbes would have made a difference in his life. She might have been the outlet to pent-up feelings that he needed so badly. Joan would have given him rest without asking suspicious questions. It might have been better—

But Joan was dead, and though Thomakein claimed that she would have been there anyway, it did little to cheer him up. Thomakein's reasoning did not include the possibility that Joan might have been making a home for him, or that even the tiniest mite of family would have immobilized her against following a planet invasion.

Joan Forbes, thought Maynard, might have been the answer—but at the present time she was another blind alley of thought. *Might have been* is the cry of the second-guesser; the Monday Morning Quarterback.

The sense of thermal balance that was high in Maynard warned him first. Then that sense that tells of another sentient being close by, its warning, and Guy turned to see a small figure beside him on the bridge.

"Elanane," she said.

"Don't say it," he warned softly. "I can watch the stars, too."

"They're so silent and quiet and big."

"And peaceful," agreed Guy.

"I've been lonesome," said Leilanane plaintively. It was with effort that Maynard resisted the impulse to put his hand on her shoulder.

"Are you now?" he asked softly.

She shook her head. "Elanane, I want to talk."

"Go right ahead," smiled Guy. "I like to hear you."

"No—this is important, and it is hard for me to begin."

"Serious?"

She nodded. "No . . . Elanane, please don't take my shoulders like that . . . it makes it more difficult."

Guy turned her around, pointed her head at the sky. "Up there, somewhere," he said quietly, "is the answer to everything. We'll find it some day. Now, Leilanane, tell me what you are worrying about."

"Thomakein asked me to marry him."

Guy's reason beat his reflex to the muscles in his forearms and prevented him from closing his hands tight on Leilanane's shoulders. Thomakein perceived the emotional tangle that was becoming more and more imminent, and by marrying Leilanane he would eliminate it. Guy knew that Thomakein thought everything of Leilanane—possibly loved the girl in a passive manner. Guy smiled briefly, obviously Thomakein could have had little opportunity to make real love to her, but a man of Thomakein's personality could carry off such a proposal by his own sheer persuasiveness. Also, Thomakein wanted power himself. Marrying the lanee's sister would put him in the eyes of the public, and doing it with the approval of the lanee himself would give him the official recognition that

he needed to become lanee after Elanane. Well, Guy would resign as soon as Thomakein wanted him to, that was reasonable and desirable. It also solved the problem that bothered both Guy and Leilanane.

"Why not?" he asked softly.

"I don't know. Something—keeps me from it."

"Me?" asked Guy in a voice that was almost a whisper.

Leilanane turned and buried her face in Guy's shoulder. "Am I bad?" she cried. "Is it so terrible to love my brother?"

"It is unfortunate, Leil," said Guy softly. "It cannot be. I, too, am torn. We must face this thing as it is. Brothers and sisters normally do not care for one another. Perhaps our being apart so much has removed the usual reason. Yes, Leil, I love you too. Do you love Thomakein at all?"

"Thomakein attracts me," admitted Leilanane. "There is something dynamic in him; dynamic and powerful and all-sweeping. I could learn to love him truly."

"Then do so. Leil, no matter what we do, you and I, if we permit this outlandish thing to go on, it will mean unhappiness for both of us."

"No. Couldn't we go . . . to Sol . . . and live there?"

Guy shook his head. "You'd learn to hate me, Leil. In our hearts we'd always know that what we were doing was dead wrong."

Leilanane nodded pitifully. "There are times, though," she said earnestly, "when you do not seem like my brother."

"Forget it," said Guy. "There is nothing more certain in the world." Guy's sense of humor told him that he was right, all things considered.

"I suppose I will forget it soon enough. What will you do?"

"What I should have done years ago—go out and find me a mate."

"I'll hate her."

Guy laughed, and if it sounded forced, Leilanane did not notice. He turned her around to face him and shook her gently. "You're a silly little lovely," he told her. "Nothing is less like the intelligent girl I know you are. It's been my fault all along. Now you'll marry Thomakein and you'll love it."

"Think so?"

"Do you think of him at all?"

Leilanane thought for a moment. "I think so," she said slowly. "Perhaps I might learn to love him—I've never had much chance."

"Again my fault. Come on, I think he's up. We'll settle this right now."

They found Thomakein reading. Guy opened abruptly with: "Thomakein, Leil says you have been talking deep."

Thomakein smiled solemnly. "I have—and what's your answer?"

"There can be one answer. When?"

"As soon as possible."

Guy searched the other man's mind for any ulterior motive and found none. He feared to increase the sensitivity of his instrument because of the necessity of fiddling

with the tuning and gain controls before their eyes. He nodded, smiled and gave Leilanane a little hug. "You're it," he said. "Now go away."

Leilanane left, and Guy sat quiet for a moment, thinking. Thomakein had solved his problem again. No matter how he felt, Guy knew that what had been growing was not to be. He asked: "Are you on the level?"

"I am. I've loved her a long time."

"Good. I think rather well of my sister."

"I know."

"Look, Tom, you're not doing this just to break this up?"

"Not entirely. Forgive me if I ramble a moment, but I want you to understand. You are never out of danger, Guy. You never will be as long as you are lanee. Once you retire, you can accept the alternative of utter retirement, or you may be more inclined to a less public life. People will revere you always, but your importance will wane, and your words will be less quoted and less watched until you are safe from chance slips of the tongue.

"Now I want to be lanee—permit me that. As I have said, I've been too far from Ertene too long. People know me, but not well enough. You sponsor this marriage, and it will be practically an endorsement from you. Then in a kiloday you may announce your retirement and I'll announce my candidacy. The family tie-up will run me in on a wave of popularity. As for Leilanane, I'll be as good and as loving a husband as I can. I know that she'll be a good wife."

"I haven't heard the word 'love' used yet."

Thomakein smiled wryly. "Honest, Guy, it always struck me slightly silly to hear two grown, mature, intelligent, strong, capable men discussing love. Forgive me. I feel that some things should be kept between the man and the woman alone. I do love Leilanane, that I promise."

"O.K.," laughed Guy. "Go ahead and commit matrimony. But look, Tom, once you get settled and running, see if you can find a friend for me."

Forty days later, Guy led Leilanane down the long aisle with a golden cord. The choral voice of the great organ rolled sonorously, exultantly, and then faded to a musical whisper as the couple reached the altar bar. The ceremony started, and its origin was lost in antiquity but returned in symbol. Guy removed the golden halo from Leilanane's head, and burned it on the flame-blackened pedestal. Thomakein accepted the protection of the woman as Guy's protection was removed and destroyed by the all-consuming fire.

Guy returned up the long aisle alone where he stood to watch the final phases of the ceremony.

The bridal couple clasped hands, and then as the music rolled out again, they left the altar bar hand in hand. They stopped before Guy,

who smiled and said: "Life, love, and happiness."

Then he shook his head. The official ceremony was over, and Guy grinned hugely. He pried them apart and took an arm of each, leaving the chapel with them. He handed them into their flier, and motioned them away with a jerking movement of his thumb. "Beat it," he said, "and don't return until you're better acquainted."

Guy returned to his offices and called for Charalas.

XIX.

The period that follows defies description. It is simple to take a protracted length of time and describe the events that transpire, but when little or nothing of interest takes place, there is nothing to record. It is similar to the engineering report of negative answer; it is inconclusive and unsatisfying.

This is an historical record of the events that took place during a certain period, and during that period there are times such as this in which nothing happened.

Literally nothing.

It is this lack of action that made the outcome. Guy Maynard was a Terran. Terrans have been accustomed for centuries to action. From the time of the caveman to the present, Terrans have lived in a cultural system that was ever accelerating. They progressed from the animal-powered vehicle to the machine-powered vehicle in a matter of years, and they went from land-travel to air-travel in the scant matter of years. Life on Terra has been a constantly-increasing tempo to the present, when Terrans traverse space in velocities measured in thousands of miles per second.

It is improbable that Terrans will slow down. Like the Ertinians, once a race is geared to high-velocity, slowing down is impossible.

The Ertinians, geared to a nomad life, could not conceive of a stable system and like the proverbial tramp, continued to think in terms of travel.

The Terran—Guy Maynard—found the peaceful life on Ertene suitable for a long time. He expected that action would take place once Thomakein and Leilanane were mated, but things fell into their grooves again, and time went on interminably.

Guy tried to push the physicists that were working on his pet projects and found a placitude that maddened him. The necessities of sudden and decisive action were not there. Ertinians didn't think as Terrans do. Eons had passed since anything of real velocity was needed, and their thinking habits had been trained along these lines.

The idea of accepting an idea and developing it immediately into a practical thing was unheard of. There had been no need. Certainly there must be no need now.

Guy was a dynamo of action in a world geared to ten miles per hour.

He found that their scientific developments were slow and cumbersome. Their science was not their own, but that of the worlds of their

passage, and with years between such contacts, scientific ambition was low, indeed. With no competitive force driving them forward, Ertene had assumed the role of a lazy man, content to live in indolence.

Had any danger come to Terra, it would have been answered immediately and more than likely Terra would have gone out to meet the threat on the threat's home ground. But after the first flurry of worry over the disclosure of Ertene to Terra by the man Gomanar, Ertene's concern subsided. Half-heartedly Ertene put up vortex projectors about their cities, and then returned to their homes.

At first, Guy worried about these weapons. It was not fair to his peace of mind to see on every hand the evidence of Ertene's dislike of Terra. His own feelings were mixed; Terra hadn't played fair with him, true, but the idea of ruling a planet that would kill thousand upon thousand of his people stuck in Guy's throat. He worried about this, and because he could tell no one about it—not even Thomakein for fear that his motives be misread—he worried alone.

His worry gave him something to do, at least.

But then as the days added into kilodays, and Ertene continued on and on and on in its course through the heavens, and no Terran forces came to contest or to seek, Guy became used to the idea that Ertene's barrier was far more obscure than the proverbial needle in the haystack. A magnet, well plied, will show the fallacy of that platitude, but trying to see nothing against a field of black—impossible.

Guy knew that his no-radiation detectors were being used. He suspected deeper developments, and fumed and fretted because he could not know what they were. His imagination cooked up many ideas, possible and impossible, for the finding of such a minute bubble in space. And it all reduced to one thing.

Mephisto had been unfound for hundreds of years of space travel and exploration. Men suspected the possibility of inner- and outer-planets and went on the search for them. They failed until the Ertinian science provided Guy with an instrument to locate such bodies.

Ertene's chances were excellent.

And the mathematicians of Ertene spent kilodays in deep theory and high abstractions and decided that the law of probabilities prohibited the finding of Ertene.

And instead of feeling concern at the idea of fighting his own people, Guy looked upon the vortex projectors in the same light as a fire department in a city of pure metal.

Guy's life changed as a result of this. Like the man on vacation, he began to seek something to do. The job of lanee was unexciting and drab after the life of activity he knew on Terra.

On every hand he saw things that would be hailed as miraculous on Terra. Medical science was far ahead of Terra's in spite of the drive of necessity; Ertene's science had gone forward passively and the

diseases were gone completely from the planet. Their accident-surgery could stand a bit of Terran influence just as the Terrans could stand some of Ertinian vaccine and antibody discoveries.

He scorned the speed of the workmen that erected the home for Thomakein and Leilanane—now named Leilakein, of course—because it took them almost a thousand days. The same home, he knew, could have been erected upon the planets Venus, with material shipped cold from Terra, and the couple would have been living in it within sixty days.

But Terran workmen used tiny MacMillans to drill holes instead of the brace and bit of the ancients. Spikes and nails were unused on Terra, instantaneous welding was done on metal, and molecular-bonding, and forming. Wood was worked with portable-power tools, and fastened together with huge wire staples formed as used from spools of wire, and driven with the machine on the premises.

In the sky, traffic moved ponderously and sedately. Even in rush periods Ertinian traffic did not approach the mad scramble that took place on Terra.

Guy drove his flier through the skies with them and came to the conclusion that the hurrying scramble of traffic and its frequent accidents was productive of a bunch of better drivers. The percentages of dented wings to fliers in the sky was higher on Ertene.

He read an editorial in a paper objecting to the lanee's hairbreadth sky-tactics and Guy scorned the words because he hadn't been in the slightest danger. After all, Guy had learned to run a flier over Sahara Base, where a flier sometimes cut between building tops in a vertical bank to keep from hitting wingtips, and where one of the more scatter-brained stunts consisted of racing another driver to the last landing space.

"Sure, they lost fliers that way," grinned Guy aloud. But it made for the quick or the dead and it kept people on their toes.

He accepted Charalas' theories about survival, and admitted that if Terra were rotten and avaricious, so was he. He knew that if it came to a choice, he'd prefer that they experiment on a Titanian than upon him.

His only sore spot was the fact that Terra denied him his right to his secret—and his life. They had been more than unreasonable in that, expecting him to break his oath to them.

And that brought back the old argument. Who was right? Should he have agreed to Ertene's oath and then sold them out?

He shook his head. Had he been that kind, Ertene would not have permitted him to leave.

Guy had spent his life under the idea that when things went too quietly too long grief was brewing. He had theorized upon it, and had formulated the relation that the amount of grief was proportional to the length of quiet time.

His accounting was piling up to

a terrible, staggering total. He knew it wouldn't last, couldn't last. He hoped that Thomakein would move, giving him a chance to lose himself. But Thomakein went about his business quietly, testing the vortex projectors and handling the details of defense.

What form the end would take, Guy didn't know.

He'd have welcomed it save for the one fact that if and when it came, Guy would then be out of a place to live. Terra had made it impossible to remain there, to have Ertene denied him would make him a man without a planet.

And so he fought the idea of alliance with Terra because such an alliance would place him right in the hands of the Terrans themselves. There would be no forgiving if they came, and once they came and disclosed Guy's real identity, Guy would have no Ertinian shelter. Ertene would throw him out for violating his promise never to return.

Guy snorted at himself. His was a life of broken promises and cross-purpose oaths.

But there was one oath he intended to keep. He would do all he could to keep Ertene free—his life depended upon it! It occurred to Guy that the way to keep things that way was to remove the source of irritation, and so he began to investigate and to reason.

How lucky it was that Elanane had passed on as he did. How lucky that Guy resembled him. Guy had accepted these coincidences glibly, without question, until it came to him that Thomakein could have done otherwise if he had found it necessary. Charalas had been lanee once, and the neuro-surgeon would have followed Thomakein's urgings, especially after Thomakein's stories of Terran intrigue.

It was too trite.

Would a popular ruler, professing isolation, refuse to arm his planet against invasion? Perhaps. There are men who think that if they mind their business, others will mind theirs. But not Terra. Not when known otherwise, would such a policy work. The idea of passive resistance went out when the airplane came in.

The real Elanane was quite a man. He was loved, admired, and eulogized. He was intelligent, well-balanced mentally, morally, and physically. Elanane was neither crank nor crackpot, and Guy knew that his theories of government were stable and sensible.

Therefore Guy reasoned that Elanane would be certain to take any measures to insure the safety of Ertene.

That would mean absolute cooperation with Thomakein. Elanane had appointed Thomakein to study Terra and to report. A spy, if the word must be used. Elanane would accept the word of his friend and do as that friend suggested.

But Elanane might go so far and no more. There is a vast difference between preparing to stand off a possible invasion and preparing to fight an offensive war. Elanane might believe that the best defense is a quick offense.

Would Thomakein do away with a friend for that?

Hardly. It must be deeper.

Coincidence was too thick. That alcohol and irritation business did not make sense. Ertinian anti-lamine drugs were similar to Terra's, and furthermore Ertinians used alcohol which would mean that the Ertinian drug must have been tested under these conditions. That brought up another thought.

If Thomakein had slipped a neutralizer into Guy's drinks, he could almost be certain that exposure would follow.

Would Thomakein gain by such a deal?

Well, would he?

Guy's hand found the sensitivity control and stepped the power high. His sensitive fingertips tuned for maximum contact with Thomakein.

The answer he sought exploded in his mind with clearness and conciseness. It's sheer audacity staggered Guy. The very gall of the man was appalling, and yet the utter forcefulness of Thomakein might push it through. The plan itself was so daring that Thomakein would stun those who were against him. Not permanently, but they would be amazed long enough for the Ertinian to take his toll.

Once Thomakein unwound his plot, it would defy catching.

Guy headed for Thomakein's office on the run, and caught him present.

"I've just figured it," snapped Guy.

"So? Figured what?"

"That little plot you've been cooking!"

"Plot? You mean my plan for—"

"It's a stinking plot and nothing more."

"You're a little upset, Elanane. Remember that you live only at my bidding."

"What did you do to Elanane?"

"It was unfortunate—"

"The men who permitted his death were dealt with," admitted Guy harshly.

"So?"

"But removing Elanane permanently didn't bother you at all."

"No, not too much. But remember that Elanane was my friend."

"I hope that I never have such a friend."

"You have," smiled Thomakein in a superior manner.

"You? God forbid!"

"Look, hothead, cool down. If you get tossed off of Ertene, then what?"

"I made an oath to protect Ertene."

"You made an oath never to return."

"I also made an oath never to tell. Also one previous to tell Terra of anything I discover."

"Do you suppose that Ertene will believe anything you tell them once the truth of your broken oaths are known?"

"They needn't know. I—am Elanane."

"We can put a stop to that," snapped Thomakein.

"I think that I can stop you first."

"No doubt," sad Thomakein

easily. "The Terran methods of hand-to-hand fighting are devastating. But you'll never conceal your victory."

"You stinker," snarled Guy. "How about Leil?"

Thomakein's face fell. "I will be blamed for Elanane's death," he said solemnly. "I am more than sorry about that."

"Being sorry is not enough."

"What do you intend to do about it?"

"Thomakein"— Guy opened the phonoscope key, dialed government headquarters, and continued—"I arrest you, Thomakein, for treason against the integrity of Ertene!"

The faces on the plate registered horror, and then action. The plate continued to register as headquarters kept the circuit open. Guy dropped his hold on the audio key to cut the sounds of men in full cry.

"Now we'll see."

"You idiot," laughed Thomakein. "You'll see how Ertinians stick together!"

"We'll see."

"You might have come in," said Thomakein. "Together we could have ruled the entire System."

"You planned to rule it alone," sneered Guy.

"I shall—now."

"You're the kind of man to share such power with me."

"Certainly."

"Rot."

"Have it your way."

"I'll have it my way," sad Guy. "It's not your way."

"Nor yours. I don't particularly care," said Thomakein easily. "My plans are about set anyway. A day or so means little."

"Days—even hours can ruin anything."

"Not when the plan includes the possibility of something slipping."

"Nice trick you played on me."

"Thank you, Guy. That's just an idea. If I can play puppets with a ruler of Ertene, an ambitious young man from Terra, and the fate of worlds and make everything come out even—I can run the show."

"You controlled the election of Elanane because he resembled me."

"Naturally. That was part of it."

"Why?"

"Because I knew that no Ertinian would permit me to arm Ertene for power and invasion. It took an energetic man, with will, force, and fear of discovery to push it through. Guy, you'd have been safe if I'd been permitted to run this freely. Terra couldn't touch you. But you choose to pit your futile will against mine. Mine—and Ertene's!"

"I am going to keep Ertene free!" shouted Guy, hammering on the desk with his fist.

"You mean, 'Gomanar is going to save his skin!' don't you?" sneered Thomakein.

"I'll shoot the works, Thomakein, if it's necessary."

"Poor lad. You had promise."

The door flung open, and police entered. They begged Thomakein's forgiveness, and then marched him from the office to the great hall wherein the Council met.

The great Hall of History brought back the memory of his first visit, and Guy smiled. Then as the Council entered and seated itself, Guy faced them. In the balcony above, faces peered over at the governmental representatives. The wall below the balcony's edge came alive with the hundred and eighty phonoscopes that would take this proceeding to all Ertene.

"A grave charge has been made," said the leader of the group. "Who brings this charge."

"I, Lanee Elanane, charge that this man, Thomakein, has plotted against the Will of Ertene."

"The charge is treason, then?"

"Yes."

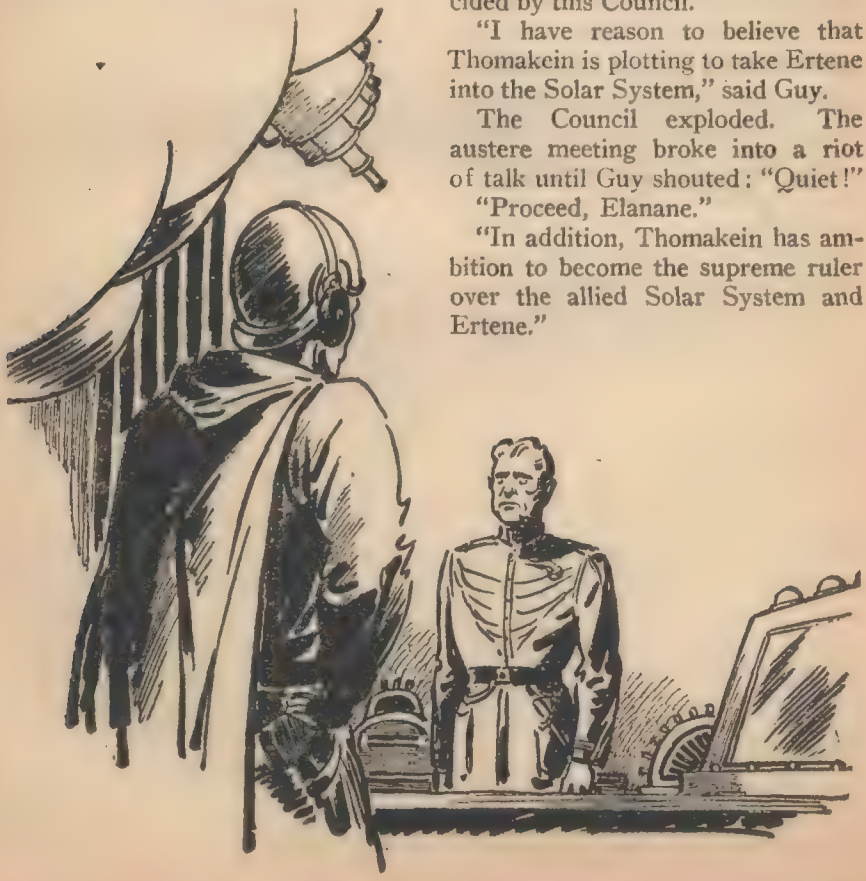
"Explain the reason for these charges. Remember, Lanee Elanane, this is no trial, but a pretrial to arrive at the decision as to the graveness of the crime. Evidence for such a crime must be collected, and if the charge is allowed, you will be permitted to gather such evidence during a period of time decided by this Council."

"I have reason to believe that Thomakein is plotting to take Ertene into the Solar System," said Guy.

The Council exploded. The austere meeting broke into a riot of talk until Guy shouted: "Quiet!"

"Proceed, Elanane."

"In addition, Thomakein has ambition to become the supreme ruler over the allied Solar System and Ertene."



Harabond, the head of the Council arose. "Assuming that Thomakein were successful in his mechanical intrigue—he might be elected to rule. The accomplishment of such a feat would prove his ability."

"Ertene can be swung, can't it?" asked Guy.

"Yes—but only if it is universally agreed on Ertene."

Guy leaned forward and his voice was dry and hard. "Harabond, on Terra it is reported that many times a brilliant but dishonest leader of minorities has succeeded in making a shambles of the world before he was subdued. It is fear of this that has made Terrans distrustful of everyone who is not openly for them. And do you think that a man capable of running this intrigue to its present state of completion would stop at elections? He'll grab!"

"Thomakein, will you offer defense?"

Thomakein stood forward with a cryptic smile upon his lips. "Harabond, how long have you been Leader of the Council?"

"Proceed, Thomakein. Leave the personalities out of this."

"You do not know the man before you," said Thomakein. "Those of you who were here when we first met a denizen of Sol—do you remember Gomanar? This is he!"

"Impossible."

"Not at all. I remembered how he resembled the lance-assistant. Elanane became lance later, remember. This man before you, Members of the Council, is the man who promised never to tell of Ertene. He was willing to violate his initial oath to Terra and keep us from exposure. This is the man who spoke openly on Terra, violating his oath to us. This is the man who is now violating his oath to us by being here—he promised never to return."

"Get Charalas," said Harabond. A courier left silently, scowling that his absence would deprive him of some interesting scenes.

"Now," said Harabond, "if this is whom you say, prove it here and now!"

"Have I no time to gather evidence?" asked Thomakein cynically.

"His charge against you was first. This matter of counter-charges complexes the proceedings. Must we hold our lance in trial to prove his right to charge another with treason?"

"I need no time," said Thomakein. "I can prove that he is not Elanane."

"Perhaps I can disprove you," smiled Guy.

"He thinks to baffle us all," laughed Thomakein. "Harabond, so great is his deceit that he thinks to fool us all."

"You may answer his charge," said Harabond to Guy.

"Harabond, do you recall thrashing me for swimming in your abandoned quarry as a youngster? I was four kilodays old, then. At four point three kilodays, Neilamon, your son and I—we were of an age—skipped school and ran away to become vagrants. They found us and we were again thrashed. It is laugh-

able, gentlemen, but I find that I cannot recall any incidents of good, bright, intelligent youth. Apparently I was a healthy, normal youth that got into trouble as any healthy schoolboy will. And there is Tocamay. He knocked out one of my baby teeth for pulling the hair of the girl that sat in front of me in school. Afterwards, we split an apple stolen from Harabond's orchard, and swore never to trust a woman again —she walked home with the school sissy whom we both hated. The sissy, remember him, Tocamay? He sits beside you, now one of the better philosophers of Ertene and destined to go down in history. Did you marry her, Diamony?"

"No," grinned the philosopher.

"Shall we take a vote?" asked Harabond.

"No impostor can be that well read," said Tocamay.

"To become educated in the present society might be accomplished, but never to recall childhood things from learning. Impossible."

"Then you admit that Elanane is Elanane?"

"We do."

"I wish to add something," smiled Guy. "If I am this Gomanar, I want to know what Thomakein did with Elanane?"

"You answer me that," smiled Thomakein. Guy started. The Ertinian looked as though he were enjoying himself immensely. It worried Guy, and he knew that Thomakein must have a pair of aces up his sleeve.

"Then we proclaim that this man is Elanane," said Harabond, and Lanee Elanane may proceed with the charges against Thomakein." He thought for a moment. "No, we must—by law—listen to any evidence offered by Thomakein that this man is not Elanane."

"I'll take the chance," said Thomakein brightly. Harabond looked at Thomakein in amazement.

"Yes," nodded Thomakein. "I'll take the initiative now. Members of the Council, a mind reader could baffle us all. He could recall things of our childhood at will, by reading our minds. This impostor—Gomanar by Ertinian pronunciation —Guy Maynard by his mother on Terra—Elanane by his own selection, has a mental amplifier, which enables him to read thought!"

"Incredible!"

"Impossible!"

"Not at all," said Thomakein. "It is fact. This instrument is not perfect. It reads surface thoughts only—unless the subject is thinking at you. Then the deeper thoughts are clear."

"But if this is true, and he is not Elanane, how can he read deep thoughts directed at Elanane?"

"Misdirection," said Thomakein. "You and I and Ertene thought he was Elanane. We thought at him as Elanane. He used these thoughts for his own purpose."

"Can you prove this?"

"Am I talking for fun?" sneered Thomakein. He stepped to the phonoscope, snapped the key, and said: "Bring it in, Lentanar."

The door opened and the man brought in the huge thought-beam instrument that Guy built in Ela-

nane's workshop. "This is it," said Thomakein.

"What have you to say?" asked Harabond.

"May I show you how it works?" asked Guy. He stepped forward, turned it on, tuned it to Thomakein and himself, and broadcast their thoughts.

"Now," he said, "read and think!"

XX.

An hour passed in silence. Then Harabond held up a hand and Guy turned the instrument off. "So," he said to the Council, "you see that my interest is for Ertene!"

"A man who is capable of developing an instrument such as this," said Harabond, "is more than capable of distorting its output to his own purpose!"

"But thought—" said Guy.

Harabond shook his head. "To think that Thomakein would plot this way against Ertene is unbelievable. Were this charge brought by an Ertinian, we might consider it valid. There is too much at stake to believe a Terran, whose word has proven to be none too good."

"Use this thing for yourself," Guy directed. "Put technicians on it, build several and prove that you cannot distort its output. Then believe me."

"An instrument such as this would deprive all of us of our sacred privacy. I direct that it be destroyed and that no research be permitted along these lines," said Harabond. "As for the incredible story I see —or was directed to witness—at the operation of this machine, I can only shake my head. I reiterate, any man possessing genius enough to build an instrument like this is more than capable of making it perform to his will. Therefore its evidence will not be allowed. And, furthermore, the Terran, Guy Maynard, will be charged with the murder of Elanane!"

"But—!"

"Take him away!"

Guy was marched from the room before the same policemen that he had summoned to bring Thomakein. As they passed the portal, Charalas entered, shook his head in puzzlement and asked Thomakein what was this all about?

"An incredible impersonation," said Thomakein, "plus the loss of a loved leader," Guy heard him explaining as the door closed behind them.

Halfway across the rotunda between the buildings, the whine of sirens climbed up the scale and shook the very ground with their power. It was a frightening sound, and the men clinging to Guy's arms let go to look around in wonder.

Guy might have run, but he was too stunned and bitter to react properly. The very gall of Thomakein! The utter blindness of the Council!

Guy envisioned the end of Guy Maynard's unhappy life at the end of a rope—or according to the Ertinian plan of painless removal. He went limp and beaten. He was licked. He was a poor pawn, and all that he could do to sway the

lives of worlds was to push in futility and fall below them when they refused to move. It would have been better—

"Terrans!"

"The Space Patrol!"

"You summoned them!" snarled one captor.

"No—"

"Liar!"

"I swear not."

"We believe not!"

Down out of the clear sky came the Terran Patrol in battle formation. With the precision that spoke volumes, the space pattern flowed from the closed cylinder to a lenticular disk and the massed ships of the task force sped across the city at fifty thousand feet.

"They've come for you!"

"No," swore Guy.

"They'll not get you!"

"We'd best give him," argued the other. "They'll fire!"

"They're firing."

"No, they're not," said Guy. "That's signaling."

"Either signaling or poor marksmanship," said the captor. "Nothing's hit."

"Terra doesn't miss," said Guy.

From the ringed emplacements, the vortex projectors vomited their toroids. Upward went the pattern of vortexes, and the Patrol broke formation in an effort to elude the whirling toroids.

"Did you?" asked Charalas, coming up behind.

"Send for them? No."

"Your story is true?"

"I swear it!"

"Then what of them?"

The pattern of toroidal vortices went up and up, and caught Terran ships, passed on, and left the Terran ships to fall inert. Pressor beams cradled the falling ships and lowered them to ground. The rest of the Terran Patrol drove inward on a slant, with the turreted AutoMacs blazing purple at the snouts and the invisible beams cutting flaring furrows across the city.

Another toroid went up before them, and pilots fought their controls to divert the ships. The slow moving vortex hovered, and the high-velocity ships arrowed through the vortex in spite of the pilots. More pressor beams caught the inert ships.

Torpedoes started to burst in the city, and with each explosion a building leaped skyward in a mass of flame and dropped in ruin. The sky crisscrossed with flaring beams, and the vortex projectors spewed forth again and again, filling the air with death.

The Patrol drove high, hovered. They fenced with MacMillans on automatic, and then fled precipitately as a super-sized toroid formed and raced upwards.

"Beat 'em off."

Guy nodded.

Then he turned and slugged his nearest captor. He took the man's MacMillan and faced the rest. "I'm leaving," he snarled.

He backed carefully away, keeping his back against the building. A movement caught his eye, and Guy's quick hand dropped an Ertinian from a high window. With the diversion, the other policeman

reached for his MacMillan, and Guy blasted the hand as it grabbed, and then drilled the man behind him for trying to reach forward for it.

"I'm not fooling," snarled Guy. "And I'll take hostage. Charalas, come along!"

"Me?" asked the aged man, stalling for time.

"You—and jump!" yelled Guy, sniping a swift shot at his feet. Guy reached the parked police flier, pushed Charalas in, and then took off on a screaming zoom upwards.

A MacMillan flared and missed, a vortex rolled upwards too slow by half, another MacMillan missed, and then Guy was off and far away and free once more. He grinned. They'd left him his personal thought-beam instrument. They'd find it hard to run him down when he could read their minds. He turned to gain a little lower so that they couldn't read his, and he wondered whether the more powerful instrument would really be destroyed now.

An hour later, along near the ocean's edge, Guy dropped the flier. "Charalas," he said, offering a hand, "I'm sorry."

"You're in a real mess," said the neuro-surgeon.

"I know—but what's Ertene going to do now?"

He snapped on the flier-radio and caught Thomakein in the act of speaking: "—obviously came at the call of the impostor. He was a high official in the Patrol, and was working undercover here. People of Ertene, we must reply! We may not hold up our heads until this insult has been repaid. We now have a fine space fleet, thanks to the vortex and the pressors, and the Terrans. Never could we have built such a fleet here on Ertene; but it is now ours."

Guy growled and snapped Thomakein off.

"What are your plans?" asked Charalas.

"I'm going to drop you off here. Then I'm going somewhere."

"Where?"

"That's it. I don't know where. I'm barred from everything but Mars—I might try there."

"You loved Ertene, didn't you?" asked Charalas.

Guy nodded. "Until I found out how blind they are. A fine thing! They give credence to a plotter because his accuser is not of Ertene. And this last—I hate them and him!"

"This last?"

"Thomakein dropped the barrier so that the Terrans would come to investigate. He planned it all—and got his fleet ready-made."

"They came to fight—"

"They wouldn't have come if Thomakein hadn't started it all. Blame whom you will, but Thomakein saw his plan start when he found me alive in the *Mardinex*. My life has been just a pusharound for Thomakein for nine years."

"You think Ertene will win?"

"Thomakein may be highly successful for a long time—but Terra will win," said Guy. "Remember, Charalas, when you strike a rat, the rat bites back. That slaughter of

Terrans back there is just nasty enough to make Terra completely mad. It happened before, on Mephisto III, and when we cooled down to the mere screaming point, there wasn't a living thing on Mephisto proper. Berserk, is the word for angry Terrans, Charalas. And I say Beware."

"And you?"

"Me, I'd like to push something around. I'm getting sick of being a pawn. I've reached the last straw, Charalas, and something's going to be crowned. That utter murder of Terrans just about broke me, and if I break completely, I'll take after Ertene singlehanded."

"Slaughter?" asked Charalas.

"It was downright murder. If I only had an army."

"That's not murder. Ertene seldom kills."

"Look, Charalas, I'm in no mood for foolishness. I saw those ships come down after the vortex hit them. Terrans do not scare stiff, Charalas, they fight to the last."

"I know, but the vortex does not kill."

"The . . . vortex . . . does . . . not . . . kill?" repeated Maynard dully.

"No."

"It doesn't kill?" came the dazed repeat again.

"No. The vortex slows the life processes to almost zero, but not quite. Several, repeated exposures will kill, of course, but two or three aren't too dangerous to healthy people."

"What do they do to recover them?"

"Heat lamps, massage, and a shot of cuperenalin."

"I've got my army then," said Guy quietly. "I've got my army!" His voice repeated the phrase, and his tone crescendoed from stunned quietness to an exulant roar. *"I've got my men!"*

"I don't understand," said Charalas.

"I don't expect you to," smiled Guy. "Below here, in the ocean, is my spacecraft. I'm leaving Ertene—but I'll be back. Oh, will I be back! Terra needs some Ertinian love of leisure, and Ertene needs some of Terra's ambition. As a team, they should get on fine!"

"What are you going to do?" asked Charalas in alarm.

"Terra pushed me around for trying to protect Ertene. Ertene shoved me out for being Terran. They're both blindly unreasonable. I'm going to play Kilkenny cats, Charalas.

"Play what?"

"The Kilkenny cats were tied by the tails and hung over a line. They clawed each other to death. I'm going to break up this balance of power in Sol, with Mars and Terra always running the main show, by hanging Ertene in an orbit. Then there'll be three to treat with, plus the minority on Venus, and they'll all be standing around with their hands in one another's pockets. Mars will have to come off of her high horse or lose her shirt when Terra and Ertene get together, and Terra will have to listen to Mars if and when Ertene takes a notion to let Mars into confidence. Ertene

will have to play baseball with both Terra and Mars or the Solarians will gang up in spite of themselves. And eventually there'll be less isolationism around Sol, and we'll all be better off. I'm going out to get me enough people to do the job—and now I know where to get 'em!"

Guy grinned at Charalas, stepped to the high bluff over the ocean, and dived.

The *Loki* emerged from the ocean an hour later. It went high and arrowed into the sky, and it was out of sight in seconds. Charalas wondered if followers would come, certainly the detectors would be running full power and would catch this ship and register it as nonconforming to the licensed ships of Ertene.

But the followers did not come, and Charalas realized that Guy Maynard was once a high officer in the Terran Patrol, and that he was more than familiar with the technical details of such a small craft. Charalas grinned, and wondered which one of Ertene's destroyed ships was now being detected in action again, and not being recorded because of matrices that eliminated unwanted alarms.

But Charalas wondered most about Guy's future plans. How and what was he going to do—and alone, too!

"Also unarmed," added Guy to himself. "Nice to know you, Charalas. And if you'll wonder about me for a week, I'll appreciate it. Bet the Ertinian land forces are on the prod right now—and you'll be found directly. No matter, I can take care of Guy Maynard from here."

Guy nosed the *Loki* cautiously toward the moon of Ertene. Their synthetic sun, dimming a bit now that the unbounded energy-intake was cut, shone full and bright upon one side, and Guy wasted precious minutes circling to the dark side.

It was mostly wasteland, yet Guy went die straight to the half-concealed emplacement.

With callousness born of necessity, Guy rammed the dome and the *Loki* was flung away in the outrush of air. Guy set his grapples, and literally tore the building apart, brick by brick, and then hooked onto the great vortex projector and lifted it high into the sky. He returned for the power equipment and took that also. He thanked his lucky star that the *Loki* was a Terran ship and not one of the less agile Ertinian jobs. The fact that it was fitted with everything but a set of turret-mounted MacMillans made Guy jump up and down in glee. He recalled the game of hide-and-seek of a couple of years ago, and knew that the *Loki* could take it.

He set the *Loki* down on a barren plain on the side away from Ertene, and donned space garb. Welding the vortex projector on the top of the *Loki* made a strange-looking spacecraft, but streamlining was unimportant in space anyway. He hooked girder after girder on the huge parabolic reflector, welding them securely to his hull. He fitted the supply cables with air-tight

bushings through the walls, and then spent several hours fitting up a series of relays to a thumb-button on the pilot's levers.

His detector rang as he was finishing, and Guy poked the drive control without waiting to see the nature of the approaching ship.

He grinned as he arrowed away from Ertene, because he knew that no matter whose ship it was, it was against him. They'd given him the time he needed, and if he managed to get through the next phase, they would never be able to stop him again. No one would ever collect the price that was upon his head—a double price, one in Solar coin, one in Ertinian.

His detector rang again, and Guy saw a small Terran ship approaching. Its turrets jerked forward, and Guy's thumb hit the button. The *Loki* bucked to avoid the discharge of the AutoMacs, but the velocity of the Terran was too high to swerve. It ran into the floating vortex and went dead, at full velocity, on and on into the nothing of the sky. It was picked up later by Ertinians, who added it to their captured fleet.

And Guy, knowing that his life might control the future of billions of lives, hardened. Friend or foe, all must fall before him until he had reached the end of this phase of his life. If he fell, the Solar System itself might never recover from the outcome of his failure.

For Maynard, knowing his Terrans, his Martians, and also his Ertinians, could have pointed out the moves of the next five years on the fingers of his hand—and no one alive could have denied him.

From ten thousand miles above, Guy looked at Mephisto III. "Two or three aren't dangerous," muttered Guy, repeating Charalas' statement. "Please God it be three with no danger, for they will have had two!"

His thumb pressed the button, and the vortex formed, whirled, and then went racing forward in a boiling toroid of energy. It spread as it went, widening swiftly and encompassing the entire moon before it wrapped itself about the ground, closing like a monstrous blanket on the far side in curlers of lightnings and fire. The vortex died, and Mephisto III was again lifeless. Guy dropped quickly, and landed the *Loki* on the same spaceport that he had created from the hard ground years ago. He looked about him at the supplies and the ships lying mute, and shuddered at the bodies that lie a-sprawl. Then he smiled wryly and apologized mentally. There were but few of the big guns of the Terran Patrol present—but they would be a good nucleus.

For now, though, Guy had work to do.

XXI.

Maynard looked at the ground, and wondered. It was cold—deathly cold—in spite of the years of the barrier-input. Cold enough to give him hope.

Guy set his crowbar into the grave and pried. The dirt came out in lumps—the same lumps blasted long

ago to create the shallow trench. The white wrappings were not soiled; the ground was frozen hard enough to prevent bits of grime from working their way into the soft cloth. The body was stiff and utterly cold beneath the wrappings, and it was more like carrying a log than a human being. But Guy took the exhumed one to the *Loki*, removed the white wrappings, and snapped on the battery of heat lamps.

Losses made the air grow unbearably hot in the little cabin, but Guy worked woodenly and did not notice. He forced himself to this. The handling of a corpse—for until it showed the sign of life it was a corpse—made Guy's stomach crawl and made his hands feel as though they never would be clean again. Time and again he looked away to keep from screaming aloud.

And when it came time to insert the needle containing superenalin into the body, Guy's fingers went cold and insensitive. The needle did not slide in the way it should, it entered with that dead feeling similar to cutting dead flesh with a dull knife. It sickened him, and after emergence, when the tiny droplet of blood did not come, it brought on that nausea again.

Massage! It was a gruesome thing, this fondling and stroking of cold, stiff limbs. The heat seemed to be doing no good, for Guy could discern no softening of the joints. They creaked and cracked as he moved the arms and legs, and it worried him because he knew the brittleness of frozen flesh. Was he breaking bone and flesh deep within this body?

More—was it worth it?

Guy's mind recoiled and rejected the horror that he felt. This body was no stranger to him. Alive, physical contact would not have been distasteful. Now that it was dead, why did he feel horror?

Alive, it might have fought him because of the liberties he was taking; with no objections to his ministrations possible, why did he feel horror and fear?

It struck Guy as insanely funny and he laughed uproariously. The cabin rocked to the sound of his laughter, and as he stopped, the echo reminded him of the cackle of an idiot. He stopped with indrawn breath, shook his head, and returned to his task.

The body moved perceptibly, and Guy recoiled from the table with the same feeling of horror and fear. This was too much like awakening the dead.

A gasp of indrawn breath came, and the body choked on the volume of air that entered the lungs. Color returned to the cheeks, and the eyes opened fluttered, and then looked at Guy full and open.

The lips parted.

"Guy!"

"Joan! You're all right?"

"Of course—shouldn't I be?"

"But—"

"That toroid in the sky—what was it?"

"It came from Mephisto."

"Then it is not dangerous?"

"Not when you understand it."

Joan snorted. "If that's the best

they can do—we'll lick them easy."

Guy nodded foolishly. How was he going to tell Joan the whole story in short of a lifetime?"

She looked around. "This isn't the *Orionad*. Why did you bring me here?"

"I . . . we—"

"Guy!" she came from the table, put her hands on his shoulders, and looked up into his face. "It's been long, hasn't it?"

He nodded.

She searched his face understandingly, comprehended the suffering and worry there, and said: "Tell me."

It came then, all in a burst of words. The entire tale from start to finish with nothing withheld. It took an hour solid, and when Guy finished, Joan looked up and asked:

"You're still going on?"

He nodded, but asked: "Should I?"

"You must. First off, Guy, you are a man alone. That might be fine for you, but life demands that you do your utmost to progress. You know what will happen."

"Ertene and Terra will fight. Ertene will fight to join the System as ruling planet, and Terra will fight to haul Ertene in by brute force. Eventually, Terra will win, partly, and subdue Ertene. Ertene will reply by swerving outward again, and try to continue on the roaming, nomad life. As a last measure, Ertene will hit Sol with a vortex. That will set things off—how, I do not know. Nova, perhaps. Instability, definitely. Or Ertene will hit Terra with a vortex. At any rate, super-vortexes will be hurled back and forth, and Ertene—if she isn't a black ruin—will go on through space with no man alive. Sol, will continue to run as a dead, sterile system.

"So long as they are permitted to fight, complete ruin will be the outcome. I must . . . I MUST prevent that."

"You must," agreed Joan. "You must be ruthless and calloused. You mustn't hesitate to kill and maim—though it sounds against all nature. Ertene must be chastened—and Ertene must be brought into the System! To let Ertene go will constitute a constant threat to Sol—no constant, but lasting for a hundred years. So long as Ertene can hurl a vortex at Sol, we are endangered. Ertene must be immobilized, and placed under the same necessities—those of keeping Sol alive and stable. Terra must be taught to accept Ertene as an equal.

"And since a three-world system must become interwoven to remain, Terra, Ertene, and Mars will lose their isolationism. But it's your job, Guy. You're the only man who understands. You are the only man who can bring a balance of power to bear. Take it and knit a new system!"

"You'll help?"

Joan smiled. "Naturally." She lifted herself on tiptoe and held him close. "I've always wanted to help, Guy. Anything you say—name it!"

Guy choked.

"You've"—and Guy recalled years ago when Joan said the same

words to him—"been lonely, Guy."

Years of loneliness and yearning and heartbreak expended themselves in a matter of minutes, and the long, bitter years dropped away, bringing them right up to the present moment. Then the future promised briefly before they broke apart. They regretted the break, though something unspoken made them stop; they could not seek the future with so much to be done in the present: They must cross this bridge first.

Gradually, the scene took on a busy appearance. Men in suits bustled around the ships, and they rang with the sound of repair and servicing. And across the plain there came a steady stream of men carrying white-swathed bodies, and when six came in, twelve left to continue the work. With progressingly larger numbers at work, the stream of men entering the huge, squat building became a double line, a triple line, and then a sixfold line. Other buildings opened, and the stream continued to expand.

Projectors and turret-mounted MacMillans roved the sky and the detectors went out to their extreme limit.

Technicians worked over Guy's thought-beam, and produced a large one for each ship in the small group. Maynard's fleet would be knit with thought-communications, and no interference would cause them to lose control. Other technicians toyed with the vortex projectors, and though Guy saw no more success here than on Ertene, the amount of activity was higher by far, and in a few weeks the Terrans had passed the most advanced researches of the Ertinians.

A convoy of Terran ships approached, and Guy merely smiled.

"I've been expecting them. Go get 'em, Harrison!"

"Right. They're replacements for this gang?"

"Were."

"Why don't we wake up the gang that was here when you came?"

"You know that. I can't trust 'em. I brought you fellows back—at least you owe me your lives."

"I'll argue that point when I get back. Ships, supplies, and men! We need 'em!"

The little fleet sped out to contact the larger convoy. Unlike the usual Terran procedure, Maynard's fleet spread wide apart, and waited in the dark of space, behind barriers.

It would have been slaughter again. This convoy expected to find its own men awaiting supply and materials. Instead, the vortex projectors spewed.

Out they rolled, and the barriers went down as they passed. Turreted MacMillans whirled, and the invisible energies laced the sky. Torpedoes winked in gouts of flame and the interferers chopped the communications band into uselessness. Maynard's ships fired a second series before the first reached the Terrans, and the Terrans, fighting their own velocity, rolled into the whirling toroids firing their Automacs to the last.

Ships rained out of the sky in

flaming ruin, cut bright arcs in the sky, and died.

And then it was all over. Massacre it would have been if the vortex projectors had been deadly. The Terran convoy was not prepared to meet a powerful fleet, and it succumbed in a matter of seconds.

Cradling pressors lowered the Terran ships to ground, and Maynard's men took possession.

"Well?" asked Harrison. "Have we got what it takes?"

"Not enough," said Guy glumly. "There was one constellation craft in that bunch—the *Leoniad*. It's a creaky old crate that uses coordinator fire in the turrets instead of autosyncs. Her torpedo tubes are rusty, her generator room reeks, and her drive is one of those constantly variable affairs that never settles down to a smooth run. The *Leoniad* is a derelict, as far as I'm concerned. The smaller stuff is fine business, though I doubt that they could stand up to a half dozen constellations. We'll fit the old tub up, though, and use her. She's all we have in that class."

"Any chance of getting more?"

"Might raid Ertene. I think it might be easy—Ertene is none too sharp invasionwise. They're armed to the teeth with vortex jobs, though."

"Vortexes aren't deadly."

"A local anaesthetic would be a killer-weapon if you could numb up a man's trigger finger only," grinned Guy. "Might as well be dead as sleeping it off on Ertene."

"I get you. How about raiding Sahara Base?"

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"We might duck their mounted stuff. I wish I knew what they are doing with the vortex projectors."

"Let's wake up the commanding officer of the convoy and ask. He'd know."

"Good idea," said Maynard, and gave the order over the phone.

Eventually, the man was brought in. He was indignant, defeated, angry, and anxious about his future in turns, and his emotions changed from one to the other swiftly. He was Sector Commander Neville.

"What is the meaning of this outrage?" he asked. "I know you. You're the renegade, Maynard."

"Stop it!" exploded Harrison. "He is Guy Maynard, and a better man than you and I, Neville."

"You, too, must have turned pirate, commander."

"I'm no pirate. What I'm doing is by sheer choice. Wait until you hear his story, and you may wish to join us."

"Never."

"Never say 'never'," grinned Harrison. "It shows how much you don't know about everything—especially human nature."

"Look, Neville, I want to know what Terra is doing with the vortex gun."

"I'll never tell you."

"I'll tell you, then," smiled Maynard. "Emplacements augmenting the planet-mounted MacMillans are being set up around Sahara Base. Luna is being set up with them, too, since the moon is a natural invasion-springboard. The main cities are being protected, too, and some long-range stuff is being put in the remote spots to stave off any attempt at entry. The triple-mounts in the midships turret of all constellation craft are being changed from MacMillan to vortex, and the fore turret on all cruisers. Destroyers will carry a smaller edition in a semi-mobile mount in the nose, and the fighter craft of the heavier classes are to have vortex projectors in fixed position. The three MacMillans will drop to two, the center being replaced in the lighter ships.

"Oh, and yes, Neville, I mustn't forget the super-sized job that is being erected on Luna for cross-space work. That's a nice, brutal, long-futured thought, Neville, and it can do nothing but bring reprisals."

"That one will not be used except in self-defense—"

"Sky-juice! I only hope that it can be destroyed before it is used. The fools! Can't you realize that Mars is erecting one on Phobos, too?"

Neville blanched. "Hadn't considered it."

"Why not? Why shouldn't they? They're no less intelligent than we are . . . don't jump up and down, Neville, they are and you know it . . . and they react in about the same fashion. The only thing that has enabled us to stay ahead of Mars is the fact that we can take three times the acceleration standing up. Another item of general interest. Ertene—you've heard of that one—is erecting a projector of super-size, too. Guess where it will be used."

Neville thought, and then asked: "How do you know these things?"

Guy tapped the thought-beam on his belt. "Thought-reading gadget," he said quietly, and then proceeded to read Neville's thoughts to him saying them word for word as Neville expressed them in his mind.

"Now," said Guy, "Sol is in for trouble. That is, unless we get Ertene in here too. That'll mean invasion. But, Neville, I don't want Ertene overrun like we did on Mephisto. Ertene is like Terra, but its culture is just enough different and its physiology different enough to make a separate entity in the System. They think somewhat differently, too, as you'll see later. But, Neville, getting Ertene here as a prime power will entail much work."

"Why must she be a power?"

"Because this projector is a final weapon. With it, I alone in a tiny fighter, can lay every living thing down on Terra, and then proceed onward to Mars, Ertene, the inhabited planetoids, moons, asteroids, meteors, spacecraft, and anything else I've forgotten to mention. The planets of Sol must be stripped of their militant attitude. Otherwise any progress we might make is stopped. With Mars and Ertene, Sol may have the combination to the long-sought space drive. Centauri lies beyond the horizon, Neville, and we may reach it if we forget our petty quarrels."

"Why couldn't Terra get that herself?"

"Because Ertene and Mars hold certain keys. Neither will work for Terra, either freely or under duress. If this war is fought to the finish, there'll be no great minds left to carry on the research. Remember that."

"What do you intend to do?"

"I intend to conquer them all!"

"You deluded idiot—"

"Look, Neville, I've got this," and Guy slapped the mind instrument. "I've got this," and Guy waved a hand at the field, teeming with its workmen, awakened from the vortex-induced sleep. "And, I've got this!" and Guy pointed outside to the great vortex projector that stood on the ordnance field. "Do you think I can be beaten?"

"Eventually, you will. No dictator ever held out against the entire System."

"I don't intend to hold out. All I want to do," said Guy pointedly, "is to set up this mind-reading, thought-beam instrument on every planet, in every congress, in every voting booth, and in every home! Then we'll see what happens to warmongers, hate-raisers, and petty politicians! The will of the people is to work in peace, and peace they will get when each knows the will of the other, alien races. Fear drives men to fight, Neville, and if any group decides to get up and run things, the vast majority will know it first."

"It'll destroy our privacy," whispered Neville.

"With everyone wearing one, the effects cancel pretty well," said Guy. "Except when the wearer intends to have his thoughts read. And the larger models, set in voting places

and congressional groups, will be used to broadcast on frequencies open to anyone who cares to listen. I don't intend that this thing will be used to deprive people of their right to think as they please, but it can be used wisely and well to prevent criminal cliques, ill-advised minorities, and individual criminals."

"It won't work."

"That I want to see for myself. At any rate, either we put a stop to this warfare that will leave Sol lifeless or we will never be able to look up into the sky ourselves."

"Far too much time and wealth is spent," said Neville slowly, "in fighting or preparing for war. The research—could use some of that money. No one has even got the first inkling of a defense against the vortex—you're right, if all have it, it will wind up in death to all. I'll help Maynard."

"Because you think that Terra is unable to accomplish her purpose alone?"

"No," answered Neville. "It's because you are sincere. You let me read your mind—and I know."

"If used for nothing else," grinned Guy, "we can assume right now that any candidate for high office must use this machine. Any who do not will find their qualifications and intentions up for argument. The graft it will kill will be wonderful."

XXII.

Maynard's force swept out from Mephisto, drove in toward Sol, and slipped between Terra and Venus. They passed Sol just outside of the orbit of Mercury and headed outward again.

Just beyond the orbit of Terra, the souped-up detectors flared briefly and then burst into full indication. Maynard smiled wryly and said: "How can any military strategy work when both sides have mental telepathy, even though it is mechanical?"

The Martian task force was plunging into space almost on an opposite course, coming forward under battle acceleration. "We're not having any," snapped Guy.

"They must have heard of the trouble Terra had with us," observed Turretman Holmes. "Maybe they'd like Mephisto?"

"They aren't heading for Terra," said Guy. "Well, we're being attacked, technically. Let's have at them."

The indication in the detector opened, and the pattern of the Martian fleet became clear. Guy shook his head at the perfection of the space lattice. Against the vortex, a perfect space lattice meant ruin.

Into the Martian fleet went Maynard's group. At terrific velocity, the two fleets met, and the vortexes flowed from Guy's ships and ran together in a mad pattern through which there was no place to pass unharmed.

There was a flash of MacMillan fire. Crossed beams radiated, and the space between the ships dotted with blinding flashes of premature torpedoes.

The Martians were more interested in avoiding the toroids, and

their fire was desultory. The Terrans were more interested in the Martian ships, and their fire was defensive only.

Then at once, the Martians were through, passed, and inert. They sped on at zero drive, and their courses diverged.

"After 'em!" grunted Maynard. "Get 'em on detectors!"

The Martians went out of sight. The contact-detectors stretched as the two opposing velocities caused the separation to add into the unthinkable miles. Days passed before the velocity of Guy's fleet dropped to turn-back velocity, and more days passed before Guy's ships were within sight of their quarry. By then, no ship was within detector range of its fellow; the sky was clear save for the inert Martian and the pursuing ship.

Slowly, the *Leoniad* crept up beside the Martian ship. And then as the velocity of *Leoniad* approached zero relative to the Martian, there was motion in the sky, the detectors flared bright, and the alarm bells rang with ear-splitting loudness. The detector showed a Martian sub-ship at pointer range.

Its barrier had been blasted open by the huge vortex that crept and rolled towards the *Leoniad*.

"Pilot! Vortex at fourteen—seven ten!"

Leoniad creaked. Ponderously, it swapped ends. A seam split, and the intercom became hoarse with the shrill of escaping air and the cries of the repair crew. An alarm rang loud, which stopped when the split seam was plastered. Acceleration took hold, and the men were nailed to their places. The generator alarm pealed, indicating dangerous overload. More plates creaked as the drivers took the power and strained against the mass and inertia of the *Leoniad*.

"Not enough!"

The turrets of the *Leoniad* whipped around and the sub-ship was blasted in a vast, expanding flare.

But its work was done. Though the drivers, straining their best, were fighting the *Leoniad* into velocity, there was too little time. The vortex caught up with the *Leoniad*, passed upward from base to top, and went on to die in the remoteness of space.

The breakers blew, the fuses sputtered, and *Leoniad* went inert.

She coasted away from the Martian at much less than one mile per second.

Maynard bumped gently into the wall of his scanning room and the pain wakened him. Dazedly, he passed a hand over his face, and the movement turned him over in midair. He clutched foolishly at the wall, and then waited until he found a handhold. He handed himself to the floor of the room, and sought the desk.

Forcing himself into the seat, Guy snapped the safety belt and then reached for the communicator.

"Pilot! Technician! Navigator! Isn't there anybody alive on this crate!"

He sat and thought. Something had happened that was not in the

books. He'd hit a vortex and had awakened without help. The others—what had happened to them?

The communicator spoke tinnily: "Is there anybody else on this space can?"

"Maynard—who's speaking?"

"You and I are all?" came the return. "This is Hume, the assistant calculator."

"Might as well get together," said Maynard. "Come on in."

"This is Evans, of the Technician's crew. Can I come in, too?"

"Wait a minute, both of you," said Guy. "Go take a look around. Someone else may be alive, too."

"How many?" asked another voice. "In case anyone's interested. this is Ted Jones, of the power gang."

"Pete Rivers and I . . . I'm Jim Phelps . . . are both O. K."

"Wait a minute," said Guy. "Someone run into the turretman's office, and the other go into the navigator's office. If either of them come out of it, let me know immediately."

"Pilot Tinsley, sir. Just came out of it."

"Were you on duty?"

"No, sir. Assistant Pilot Adcock was on the board."

"Oh," answered Guy. "He's still in the greenhouse, then."

"Did you expect him?"

"Dunno," said Guy slowly. "The passage of the vortex effect is leaving this office spherically. Or roughly so. Spread out—"

"Turretman Greene just came to, sir."

"You beat me by ten seconds. Navigator Sampson just took up *his* interest in life."

"See?" continued Guy. "As I was saying; spread out and cover the ship. Record each awakening time precisely. Later we'll get the dimensions of this can to the fractional millimeter, and we can chart what happened."

As time went on, the communicator took up the clamor, swelling from individual calls to the full cry of the personnel in a regular increase.

The calculator and Guy sat before the plans of the *Leoniad* and drew lines, scribed curves, and calculated in simple trigonometry. It did not take long. Guy put a pinprick in the plan and said:

"It's right here!"

"You suspected that," answered the other.

"I know—but what's in here that would nullify that effect? It takes heat, work, and superenalin."

"Haven't you anything odd?"

"Nothing that the other ships haven't got . . . no, wait . . . no, can't be."

"What?"

"Can't possibly be."

"Name it, Maynard. No matter how silly it may seem, that's it!"

"This thought-beam gadget—the heavy-duty one."

"That's it."

"But Mephisto went down under the vortex projector. To the last man. They had these things."

"You fired and fired and fired, though. Hundreds and hundreds of vortexes. The effect is cumulative, I've heard. But for a single shot,

Guy, we've got a remedy."

The ship took control as the instrument gang replaced the fuses, threw in the breakers, and reset the balancing controls. The *Leoniad* swapped ends, raced for the quarry that was invisible in the distance, and took over the Martian.

It was days before the combined fleets were collected again. They converged upon a million cubic miles of space, and mulled around in a mad pattern before they turned and headed for Mephisto.

The commander of the Martians came before Guy.

"I am defeated," said the Martian stiffly. "I would have preferred it at the hands of—"

"One who is not a traitor?" asked Guy. "Marshal Monogon, why am I a traitor?"

"You betrayed your oath."

"My oath," said Guy, "was intended to set up a condition in which a man will do the best thing for his homeland. That I am doing."

"You think so."

"They'll all think so."

"I am defeated," repeated Monogon. "I hope to see the day when you are caught."

"You may, at that."

"But to what end are you working? You fought Terrans. You fight us. Why?"

"Monogon, you have a super vortex machine set up on Phobos. Terra has one on Luna. You now know that the vortex will not kill on a single try. But how much less dead will the entire System be if either of us fires?"

"I . . . yes, the speed will permit you to fire once we have fired. You would be able to detect the operation of the projector hours before the toroid envelops Terra."

"And with no one alive to awaken any of us—those who are not on Terra will fight one another to the death—vortexes will be coming from every solid body in the Solar System within a week. Do you think I want that?"

"You hope to accomplish something?" asked Monogon. "What—and how and why?"

"I hope to unify. I cannot appeal directly because of my . . . my traitorous past. But Monogon, I can and will fight to the last breath to try my plan. Never forget Ertene, Monogon. They'll be here next, looking for me—or something. They've got to have their trouble, and they well know that a good offense is the best defense. They've got vortexes too, you know. As a last resort, they'll fire on us both. What I've got to do is to hold off both Mars and Terra—and then go out and take Ertene!"

"Madness."

"Necessary. Ertene must be brought in, so that she will depend on Sol and the rest of us."

"You're mad, Guy Maynard. Stark mad. But I agree with you. The vortex is deadly, and with things at the breaking-point as they are now, oblivion is but a step. Can you believe me?"

"Yes," smiled Guy. He tapped the thought-instrument and explained.

"Then you can also believe me when I offer you my aid?"

"Yes."

"I'll make no move against Mars, understand."

"I'll not ask you to. You'll go to—"

The radiation alarm broke.

"What's up?" asked Maynard.

"Nothing dangerous. We just uncovered a Terran crate trying to run through us under a barrier."

Maynard looked at Monogon. "We'd better hurry," he told the Martian. "They'll be tearing up the Solar System before we can stop them."

The combined fleet increased its acceleration towards Mephisto.

The spaceport on Mephisto became a mad place. Terran ships stood plate to plate against Martian ships, and the sky above the port was interlaced with the invisible communication beams that connected incoming and outgoing ships. At no time was the sky ever completely clear of spacecraft.

They came in sight out of the clear black sky of the moonlet, and hovered until the ship before them had landed. Then they dropped slowly into the landing place assigned to them, coming to a full landing just in time to see the next ship begin to drop. Another ship would come from outer space at this time, and assume the hovering area, awaiting its turn.

Ships took off at the same rate. But unlike the cumbersome landing feat, they leaped upward into the sky, running a direction-beam before them, and disappeared in seconds.

The nerve center of this activity was a squat building on the edge of the port. In it worked Maynard's spies—his *agents provocateur*. A black chamber of intense men, all working their shifts over huge mental projectors.

Solarian shipping was being completely disrupted.

No ship took off from any of the spaceports without Guy's knowledge. And no cargo worth having ever reached its destination. Mephisto was becoming the most valuable planet-system in the Solar sphere, for the cargoes that were pirated and brought to Mephisto were those items that Terra and Mars could not find in plenty at home.

The capture of single ships had gone on unchecked for a long time. Then protection began to go with the shipping, and finally the spacelines were running in full convoys that sported constellation craft for protection. But Guy's fleet collected the constellation craft as easily as they caught tramp spacers. When a spaceship is going a thousand miles per second, a barrier-sown toroid could burst from space before the huge ship. It was a matter of dropping the toroid so close to the nose of the ship that the turreted AutoMacs had no time to answer the impulses that came from the detector-couplers. The huge ship plunged through the toroid, and left the rest of the unprotected convoy for Maynard's choice.

And when they sent decoys, May-

nard's men ignored them. Only when the carriers held valuable material did they suffer.

The ships of Ertene came in for their share. Guy worried about the thought-beam instrument that he had left there; he knew that no sensible world would adhere to a program of destroying such a device. One of the main thought-beam jobs was continually directed at Ertene and the thought-beam instrument that Guy had left. So far, they had done nothing but use the thing locally. It would not reach Mephisto by a billion miles, and so Guy knew his secret was safe.

At least for the time being.

But molesting Ertene on Ertene's own ground was not possible; once they came within range of Ertene's thought-beam, the secret of avoiding the vortex would be out. Only those ships of Ertene that came outside of range were taken—and they were all too few.

But there are ways of starting trouble—

The intercom pealed in Maynard's office. "Andrews has escaped," came the message.

Maynard smiled. "Good. As we planned?"

"According to clockwork," came the amused answer. "He bopped Timmy over the head with that hunk of plastic, used the same plastic rod to pry his way out of the house, and then he took off like a demon in the *Ursiad's* lifeship."

"I wonder what he thought we had it out for," laughed Guy. "Also I wonder what he thought we were using to keep him in?"

"He's not too well informed. He knows, for instance, that we can avoid the vortex—and that some sort of mind-reading gadget is available. Furthermore, he knows that there is one on Ertene. Nothing about the stuff, understand, but just that such a thing exists."

"That's the ticket," smiled Guy. "Now we'll get action!"

Detector operation of the following events were impossible. In their place, the men in Maynard's black chamber controlled a model of the System, synchronized with others throughout the Mephistan system of planet and moons.

And for the first time in history, Mars and Terra took off in battle array and headed together in the same direction. And Mephisto followed them, watching all the way.

At nightside, the combined fleets dropped onto Ertene, showered the area with toroids, and landed. They forced the heavy doors open and emerged again with the machine.

Up they drove, into the Ertinian sky, and away. Ertene came to life then, and vortex projectors hurled their toroids into the sky after the fleeting ships of Sol.

Sol's ships scattered and avoided the toroids, and then answered by dropping their own onto a greater area than before. They silenced those that might give danger, and then sped away in a die-true line for Sol. From Ertene there arose the Ertinian fleet to give chase.

Normally, Terra could have outdistanced them, for they had the head start in an accelerative race.

But Mars could not keep that killing pace, and Terra was forced to hang back; they hoped to best Ertene in full battle, if escape were impossible.

Conquest would give them Ertene, and that would have been desirable, too. But conquest of Ertene was planned for the future, and well-planned.

So Ertene caught up with the slower fleet of Sol, and the two intermingled.

Space filled with the myriad winking spots of prematured torpedoes. Gouts of released energy burst in empty space as crossed MacMillans backfired. Energy bombs were strewn as a matter of course to prevent the operation of sub-ships, and the milling mass circled in a battle plan that no space marshal had ever planned.

The ship that had Ertene's thought-beam was known. Battle centered about it, and it became evident that neither side cared to direct its fire in that direction. The whirling melee spread out into a vast sphere of fighting ships, with the thief in the middle. Wide spread the battle; the thickness of the fighting globe dropping as the sphere increased.

Maynard smiled. "Now!" he said.

And from the *Leoniad* there dropped a torpedo in a barrier. Invisibly and indetectably it sped, led by the radiation from the thief. Through the fighting globe it went safely, and inside, where no bit of stray energy filled space. Not even detector beams entered this space, and the men in the thief looked out on all sides at the mighty globular battle with wonder. They realized that this fight was over them, and that because of their loot—the thought-beam instrument—neither side would strike at them.

But the barrier-covered torpedo found them. The barrier hid the torpedo from them, but the barrier permitted the detecting radiation to enter and energize the director.

The thief exploded in one coruscating flash. The white-hot gases expanded rapidly, wildly, cooling as they spread.

Action stopped.

Had this been a fight on land between men, they would have turned as one and looked at the ruin. They would have stood elbow to elbow with their enemies, and wondered. Both sides knew the value of what they were fighting for, and they knew the other side knew its value, too. Loss of the thief stunned them beyond belief—

And stunned them beyond the desire to fight one another.

The flashing lights of prematured torpedoes died as the mechanical finders still worked on the already-launched missiles. No more came from the tubes, and gradually the flaring died, leaving the ether clear of crackling radiation.

Far-flung detectors flared, and the cardex machines in hundreds of ships purred, and came up with a single answer. It was called aloud, and on the throats of a million men, Terrans, Ertinians, and

Martians, there came the single word:

"Leoniad!"

With no order from High Command, every ship turned and headed for the *Leoniad*.

The *Leoniad* lazed along, waiting. Just ahead of MacMillan range, the *Leoniad* ran before the combined fleets. From all sides there came the rest of Maynard's fleet, making a space-pattern about the *Leoniad*.

Within the Solarian fleet, quick orders and consultations passed. The fleet took battle shape, spread out, and gave chase according to plan. Their space pattern became that which was developed by the Terran command to avoid sown toroids, and in comparative safety, they settled down to the long, stern chase.

Before them, Maynard's fleet ran easily. Forward-flying toroids died abruptly, killed by the anti-radiations of Guy's high-powered projectors; torpedoes were sought and prematured in space; and MacMillan fire was not answered save to cross the oncoming beam with a backward-flung beam. The initial flurry of fire stopped, then, and the chase became a matter of hare and hounds.

The Solarian fleets were forcing the flight. Mephisto's fleet was obviously running to their base. That meant, to the Solarians, that at midway, there must be a turnover maneuver so that Mephisto's fleet could decelerate for their landing. Then they would catch up, for the velocity attained by Maynard's outfit must be forced down. The Solarians were not trying to effect a Mephistan landing, but were after the other fleet. They would not turnover at mid-point, and then they could catch that fleet of pirates that stayed just out of range.

XXIII.

Turnover came, inevitably. Maynard's fleet flashed up to the "fix" in space and began the end-swapping job. Solarians watched, gloating. Maynard *was* going to turnover! The gap closed. Terra and Ertene alerted for action, and the entire personnel of the combined fleets went on double-watch. No one knew how much stuff Maynard's men had developed.

Vortex projectors sowed toroids that floated with Guy's ships. In and about the pirate fleet, the huge vortexes of energy roamed, covering the fleet by sheer number.

Torpedoes directed against the toroids prematured. MacMillan fire entered them, and added to their total energy. Other toroids flung into them merely added to their number.

And the very number of them made operations in the combined fleets difficult. The space pattern was never intended to fight into a massed effect. Ertene and Terra spread slightly, opening up a hole. Through this hole flowed the toroid-covered Mephistan fleet, and Maynard's men were behind. Turnover was completed, and with the indifference to the Solarian fleet that was maddening, Maynard gave the order

to decelerate for landing on Mephisto.

Solarians fell behind—below, now, for they were dropping onto Mephisto, the deceleration creating a false gravity.

They crammed on the deceleration too; not to do so would have put them far beyond Mephisto. They crammed on all they had, and it was just enough to stay below Maynard's fleet—

Just outside of range.

The men in the combined fleets of Ertene and Terra writhed in hatred. Mars, unable to keep up with the man-killing gravities, laughed nastily—she thought that the fun would have been over before her slower ships could join.

But though amused, Mars was none the less angry. Her men in her ships were killing themselves to keep from arriving too late. They knew now that the big fight would be around Mephisto.

It takes but a minute to tell, but it was days and days in the action. Men slept and changed watches and went through the tiresome routines of space travel across the System. And ever before them was the specter of Maynard's fleet, just out of range. It maddened them, and it made them sacrifice a few fighter ships that tried to run ahead, into the other fleet. They were lost, every time, without doing any damage.

And the temper of the men increased by the minute—and days and days with hours full of minutes went by with not one bit of action to salve their hatred.

Mephisto loomed in the sky below, eventually, and the fleets swept down to Mephisto, and the Solarian fleet spread wide and passed the planet. They did not like the idea of being between a fighting fleet and its home base. Maynard landed easily, and was able to consolidate his force on the ground before the combined Ertinian and Terran fleets circled and returned.

"Just hold 'em off," said Guy.

And again there passed the maddening job of not being able to do anything to the enemy. They patrolled the planet, but it was unsatisfactory patrol. Any ship that came too low was fired upon and collected by Guy's planet-mounted projectors. Solarians thought that they knew how to arm a planet, but Mephisto was well nigh impregnable. Toroids stopped, torpedoes prematured, and MacMillans flashed in the sky, dissipating the energy with no harm save the blown fuses in the ships.

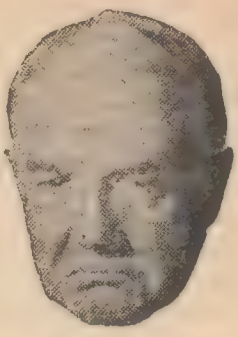
"How long?" asked Neville.

"Wait for Mars," smiled Monogon. "I instist that Mars be not left out. What's good enough for them is good enough for my world, too."

"He's right," said Guy. "We'll wait."

And finally Mars arrived on the scene, and the fleets went high to discuss the problem of extinguishing this menace. Guy followed their conference—and they suspected that he did. Their plan was bold. A power play, and it came in a down-thrust of the ships of three

"I'll tell you GOOD TIMES ARE COMING!"



"I'll tell you BAD TIMES AHEAD!"

What's it to you?—PLENTY!

OKAY! Maybe the optimists are right. There'll be good times after the war.

OKAY! Maybe the pessimists are right. We'll have another depression.

What's it to you? PLENTY! It's largely in *your* hands as to which we'll have.

The one way to make it *good times* is to do your share to help keep prices down now!

That means *buying only what you really need*. It means *paying off your debts, saving your money*.

And here's where you're lucky. The same program that helps insure prosperity is also the best possible way to get yourself in shape to take another depression if one does come. So what? *You're right both ways*—if you save your money. *You lose both ways*—if you splurge right now.

Think it over, fella. Then get in there and fight. Read—and observe—the four rules to head off inflation. The war isn't over yet. And the war against *inflation* isn't over yet—by a long shot. Remember World War I? The cost of living rose twice as fast *after* the war as it did during the war itself.

4 THINGS TO DO to keep prices down and help avoid another depression

1. Buy only what you really need.

2. When you buy, pay no more than ceiling prices. Pay your ration points in full.

3. Keep your *own* prices down. Don't take advantage of war conditions to ask more for your labor, your services, or the goods you sell.

4. *Save*. Buy and hold all the War Bonds you can afford—to help pay for the war and insure your future. Keep up your insurance.

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worlds. They drove toroids before them, filled the air with torpedoes, and interlaced the sky with MacMillans.

"Now?" asked Neville.

"Now," smiled Guy. His smile was bitter and hard. He stepped to the vast instrument and put the helmet over his head. His left hand turned the switch and the right hand adjusted the intensity. "Cease fire!"

The fighting stopped.

"Land!"

The inrushing of fighting ships continued, and they landed quietly, one after the other. Immediately, doors opened in three of them and three men emerged. Stiffly they walked to Maynard's headquarters where they were greeted and taken to Guy's room.

"You can not touch me," said Guy in a hard, cool voice. "I am impregnable. You will never be able to touch me!"

"You stinker," snarled Space Marshal Mantley.

Guy faced Thomakein next. "Have you anything to say?" he snapped.

"We are defeated," said Thomakein. "What would you have me say?"

Guy turned to the Martian. "Marshal Ilinoran, any comment?"

"We are defeated—but we need take no insult! What have you in mind?"

"At the present time, the carriers of your fleets are being packed with your men. Some of them will remain, of course. But I like the size of your fleet, gentlemen. I'm keeping most of it for my own. I have prepared a little proclamation which you may take back to your respective governments. I, gentlemen, proclaim myself the Emperor of Sol!"

"Megalomaniac!"

"As Emperor of Sol, I will tell you," continued Guy, indifferent to the snarl, "how and when to collect the yearly tribute from each and every Terran, Martian, and Ertinian. You may suit yourselves to any other arrangements. Mephisto is mine, and will stay mine. But I shall require money, merchandise, and supplies to stock the planet.

"And if you think differently, you may try to defeat me! *And I hope you try!*"

"We'll pay nothing—"

"I hope you try that, too," snapped Maynard. "You have no idea of how tough a real tyrant can get! A single lesson might convince you. A super-toroid hurled into the Manhattan area—?"

"You're a fiend!"

Guy nodded. "Never make me prove it," he said quietly. "Now, gentlemen, you will receive your instructions as you leave, if you prefer to leave. I offer you the chance to join me—but remember that I can read your mind and find out how true you intend to be. I intend to be very harsh with spies."

"I'm leaving—but I'll be back!" promised Mantley. He tried to sound ominous, but his position was not firm to carry it away. He knew that he sounded flat and it enraged him.

"We'll both be back, together!" snapped Ilinoran.

"Ertene will be back, too!" added Thomakein. "You wouldn't permit us to leave, and I know it!"

Guy nodded. "I'll be waiting. But don't forget that I am still master of you all. And I'm going to stay master. I've spent ten years being pushed around, and now I'm going to do some pushing myself! I have very little affection for any of you; Terra disowned me, Ertene did not want my offer of fidelity; Mars wanted to torture me and did, partly. Had any one of you taken me for what I had to offer, this would never have happened."

Mantley and Ilinoran left. But Thomakein came forward and put out a hand.

Guy looked at the hand and then at Thomakein. "Why?" he said sharply.

"You did it!"

"I did it, all right. But look at me. And what have you to offer?"

"You still do not know. Guy, forgive me. I tried, myself, and failed. Your plan is superior to mine—yours works."

"Plan? Know?"

"I forced you into this."

"Yes, but you had no plan except a sort of self-aggrandizement."

Thomakein shook his head. "You didn't read my mind deep enough, Guy. The instrument you carried was never perfect and deep-seated concepts are often hidden because of the more powerful surface thoughts. I thought of conquest—and realized that sleepy, lazy Ertene couldn't conquer the Solar System

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and keep it conquered. What Sol needed was a man with drive and ability. No one wanted you, Guy, because you were continually torn between your own promises. I was responsible for that, I fear. I took you because of your latent ability, those long years ago, and planned well."

"And so you forced me into this place?"

"Yes," smiled Thomakein. "But the only way that you'll hold this sun full of cross-purposes together is to provide a common menace. Terra hates you more than she hates Mars, and Mars will co-operate with Ertene to get you. Ertene, burning mad because her desire to wander is curtailed by you, will throw in with both of them. Perhaps they will get used to co-operation after a bit, but never forget that competition will make advances far quicker than complete co-operation.

"Yes," said Thomakein, "I tried. I plotted and tried, and then knew that Ertene did not have the drive, the ambition. You, Guy, had the ambition, and all you needed was to get the killer-instinct, so to speak. You had to be driven to it. You did it. Can you hold it once someone finds the key to the mental-gadget?"

Guy grinned. "They never will. Mephisto is the only world with normal temperatures low enough to make key more than a feeble-order effect. Upon Mephisto, it becomes evident in the third decimal place; on any other world it is several decimal places beyond the experimental error. Besides," Guy said with a hardening of the jaw muscles, "I've got the whole System under coverage. I'll permit no experiments along those lines!"

"I see what you mean. Well, Guy, you're the Emperor. For the love of God, stay that way! The first time you abdicate, hell will break loose all over the System. You are the common menace that will hold us together."

Guy smiled wryly. "So you drove me to it. It was necessary, I know. But it was a dirty trick to play on any man. It goes deeper than that. Joan and I can't see raising a kid in this mess."

"Your children must be raised absolutely incognito. I owe you more than life, Guy. May I help, please?"

Maynard took Thomakein's outstretched hand.

"Finished," said Thomakein, shaking the hand hard.

"Not finished—nor will it be. I have a lifetime job of making myself more hated than any traditional enemy."

Thomakein nodded. He stepped back and saluted.

"Farewell, Guy Maynard—Ruler of The Solar Worlds!"

THE END.

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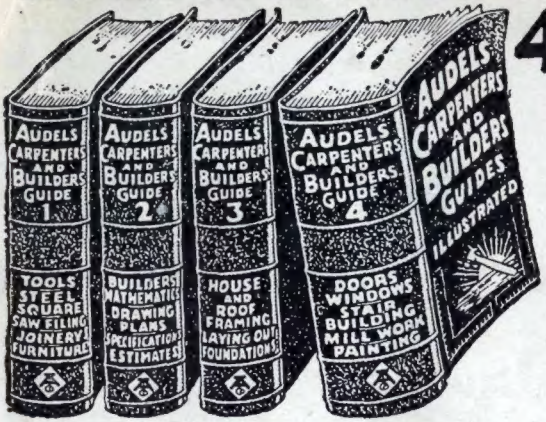
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